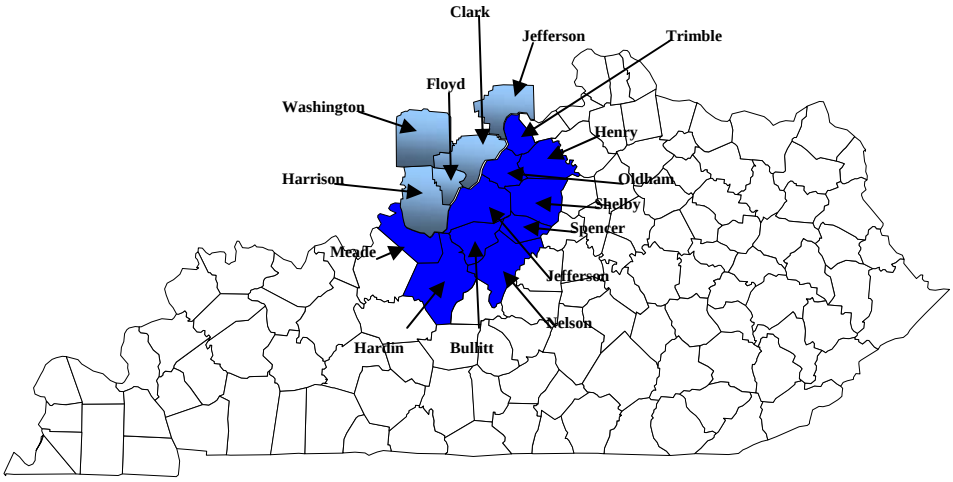
Louisville Area of Evaluation, KY-IN



The Louisville area of evaluation includes the Louisville, KY Metropolitan Statistical Area (MSA, ranked the 43rd largest MSA in the United States). This MSA encompasses thirteen counties, Clark, Floyd, Harrison, and Washington Counties, Indiana and Bullitt, Henry, Jefferson, Meade, Nelson, Oldham, Shelby, Spencer, and Trimble Counties, Kentucky.

The Louisville area of evaluation for the purposes of proposing boundary designations for the new 24-hour National Ambient Air Quality Standard will also include the following: Hardin County, Kentucky and Jefferson County, Indiana.

BULLITT COUNTY, KENTUCKY

Bullitt County is part of the Louisville, KY-IN Metropolitan Statistical Area (MSA) and is on the I-65 South interstate corridor. It is located directly south of Jefferson County, southwest of Spencer County, northwest of Nelson County, and northeast of Hardin County.

Geography/Topography

Bullitt County has a land area of 299 square miles. The Ohio River touches the western county border. The county is geographically at the junction of the Outer Bluegrass and the Knobs Regions in north central Kentucky. The county is divided by the north-south I-65 interstate corridor.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Bullitt County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Bullitt County is performed by the Kentuckiana Regional Planning and Development Agency (KIPDA) and the Kentucky Transportation Cabinet.

Air Monitoring

The Bullitt County $PM_{2.5}$ monitor (21-029-0006) shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor to the south shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which also achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Oldham County.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Bullitt County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 72,851 persons living in Bullitt County. (See table 3) That represents approximately 243 persons per square mile. The population of Bullitt County is approximately 35.4% rural with 64.6% of the people living in incorporated areas. The largest cities in Bullitt County are Mt. Washington and Shepherdsville.

Bullitt County's population from 2000 through 2006 increased by approximately 19% (61,236 to 72,851). The population in the county is expected to increase overall by 27.7% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Bullitt County represents approximately 5.4% of the total population in the area of evaluation and 6.8% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Bullitt County were estimated at 2689 tpy in 2002, which represents approximately 16.3% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Bullitt County were estimated at 221.4 tpy in 2002, which represents 0.3% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Bullitt County were estimated at 390.8 tpy in 2002, which represents 0.3% of the total of 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Bullitt County were estimated at 56.1 tpy in 2002, which represents approximately 3% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Bullitt County were estimated at zero tpy in 2002, which represents no contribution to the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Bullitt County are subject to PSD requirements with New Source Review (NSR), CTG RACT and non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Bullitt County.

Onroad Mobile

Onroad mobile source VOC emissions from Bullitt County were estimated at 1598 tpy in 2002, which represents approximately 5.0% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Bullitt County were estimated at 3209.6 tpy in 2002, which represents approximately 6.1% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Bullitt County were estimated at 96.6 tpy in 2002, which represents approximately 4.8% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Bullitt County were estimated at 46.2 tpy in 2002, which represents approximately 5.6% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Bullitt County were estimated at 87 tpy in 2002, which represents approximately 5.2% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Bullitt County is 33.3% and classified as high. The commuting traffic from Bullitt County into other counties is significant at 72.5%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Sources

Nonroad mobile source VOC emissions from Bullitt County were estimated at 506.5 tpy in 2002, which represents approximately 5.3% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Bullitt County were estimated at 577.7 tpy in 2002, which represents approximately 2.0% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Bullitt County were estimated at 49.8 tpy in 2002, which represents approximately 1.3% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Bullitt County were estimated at 44.4 tpy in 2002, which represents approximately 2.7% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Bullitt County were estimated at 0.35 tpy in 2002, which represents approximately 3.2% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Bullitt County were estimated at 983.7 tpy in 2002, which represents approximately 5.3% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Bullitt County were estimated at 51.1 tpy in 2002, which represents approximately 1.2% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Bullitt County were estimated at 93.4 tpy in 2002, which represents approximately 2.0% of the total of 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Bullitt County were estimated at 803.5 tpy in 2002, which represents approximately 8.4% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Bullitt County were estimated at 94.3 tpy in 2002, which represents approximately 1.1% of the total of 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

Bullitt County based on 2004 – 2006 $PM_{2.5}$ monitoring and emissions data, is meeting the 24-hour $PM_{2.5}$ standard with a 3-year average of 33.8 micrograms per cubic meter.

In the Louisville area of evaluation, KY-IN, Bullitt County contributes approximately:

- 7.6% of total VOC emissions (76,191 tpy)
- 2.7% of total NOx emissions (152,596 tpy)
- 0.4% of the total SO_x emissions (159,002 tpy)
- 1.8% of the total NH_3 emissions (10,210 tpy)
- 6.8% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

Based on data analysis done by ASIP and VISTAS, the pollutants of most concern regarding $PM_{2.5}$ formation are SO_2 and NO_x and direct PM. Bullitt County contributes a relatively very small portion of the area's NOx emissions (2.7%) and the SO_2 emissions (0.4%).

The 48-hour back trajectory HYSPLITS for Indiana and Kentucky have been included in a separate section for the annual top ten maximum concentrations at each monitoring site in 2004-2006 for those days when the 24-hour ambient monitoring concentration for $PM_{2.5}$ exceeded 35 micrograms per cubic meter.

In addition, during 2005, several days of fires in Mississippi and Arkansas impacted $PM_{2.5}$ monitors across Kentucky. Two dates in particular September 10 and September 13 appear repeatedly in the maximum values report (See Table 9) for counties being evaluated for designation under the 24-hour $PM_{2.5}$ NAAQS.

In accordance with 40 C.F.R. 50.14(c)(3)(i), the Kentucky Environmental and Public Protection Cabinet made available the ambient air monitoring data requested for exclusion from National Ambient Air Quality Standard (NAAQS) determination, due to exceptional events. The *REQUEST FOR CONCURRENCE OF EXCEPTIONAL EVENT FLAGS ON $PM_{2.5}$ 2004-2006 DATA: Bullitt, Fayette, Kenton, McCracken and Warren Counties, Kentucky* document details the ambient air monitors operated by the Kentucky Division for Air Quality that were impacted by exceptional events and the $PM_{2.5}$ data requested for exclusion from the NAAQS determination in the years 2004-2006.

The following dates were requested.

Date	Site	Concentration	Event
6/21/2005	21-029-0006	35.1	Local fire/ Missouri fires
6/21/2005	21-145-1004	36.9	Local fire/ Missouri fires
9/10/2005	21-145-1004	39.6	Arkansas/Mississippi Fires
9/10/2005	21-117-0007	52.75	Arkansas/Mississippi Fires
9/10/2005	21-029-0006	39	Arkansas/Mississippi Fires

9/10/2005	21-067-0012	44.1	Arkansas/Mississippi Fires
9/10/2005	21-067-0014	38.2	Arkansas/Mississippi Fires
9/13/2005	21-067-0012	40.8	Arkansas/Mississippi Fires
9/13/2005	21-067-0014	35.1	Arkansas/Mississippi Fires
9/13/2005	21-117-0007	42.1	Arkansas/Mississippi Fires
9/13/2005	21-227-0007	35.1	Arkansas/Mississippi Fires
7/19/2006	21-029-0006	39	Arkansas and Local Fires
7/19/2006	21-145-1004	36.7	Arkansas and Local Fires

The public comment period relating to the exceptional event data was November 1 through December 1, 2007. Kentucky is currently awaiting concurrence from USEPA.

This information is being included here because many times these two September 2005 dates appeared as the highest maximum values for counties in the area of evaluation (see Table 9). Satellite images submitted in the exclusion request to USEPA show the smoke plume settled widely over Kentucky. Meteorology also indicates very stagnate weather conditions over several days.

Kentucky wishes to consider the impact of these fires in Arkansas and Mississippi as exceptional events that made the 2005 $PM_{2.5}$ concentrations higher than otherwise would have occurred.

The monitoring and emissions data and other documentation presented indicate that Bullitt County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation, KY-IN.

Therefore, Bullitt County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

OLDHAM COUNTY, KENTUCKY

Oldham County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is on the I-71 North-South interstate corridor. It is located to the northeast of Jefferson County, to the southwest of Trimble County, to the west of Henry County, and to the northwest of Shelby County. It is also to the southeast of Clark County, Indiana.

Geography/Topography

Oldham County has a land area of 189 square miles. The Ohio River forms the northwestern boundary of the county. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Oldham County area resides with the Kentucky Environmental Public Protection Cabinet. Transportation planning for Oldham County is performed by the Kentuckiana Regional Planning and Development Agency (KIPDA) and the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Oldham County.

The Bullitt County $PM_{2.5}$ monitor to the south shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor even further to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which also achieves the $PM_{2.5}$ 24-hour National Ambient

Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Oldham County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 55,285 persons living in Oldham County. (See table 3) That represents approximately 292 persons per square mile. The population of Oldham County is approximately 34.8% rural with 65.2% of the people living in incorporated areas. The largest cities in Oldham County are LaGrange and Crestwood.

Oldham County's population from 2000 through 2006 increased by approximately 18.6% (46,178 to 55,285). The population in the county is expected to increase overall by 37.5% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Oldham County represents approximately 4.1% of the total population in the area of evaluation and 5.1% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Source

Point source VOC emissions from Oldham County were estimated at 67.2 tpy in 2002, which represents approximately 0.4% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Oldham County were estimated at 41.3 tpy in 2002, which represents approximately 0.1% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Oldham County were estimated at 1.1 tpy in 2002, which represents nearly zero percent of the total of 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Oldham County were estimated at 24.2 tpy in 2002, which represents approximately 1.2% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Oldham County were estimated at 4.5 tpy in 2002, which represents approximately 5.0% of the total of 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Oldham County are subject to PSD requirements with New Source Review (NSR), CTG RACT and non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Oldham County.

Onroad Mobile

Onroad mobile source VOC emissions from Oldham County were estimated at 981.3 tons per year in 2002, which represents approximately 3.1% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation. (See chart Lou-2)

Onroad mobile source NO_x emissions from Oldham County were estimated at 1717.8 tpy in 2002, which represents approximately 3.2% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Oldham County were estimated at 55.1 tons per year in 2002, which represents approximately 2.8% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Oldham County were estimated at 25.2 tons per year in 2002, which represents approximately 3.1% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Oldham County were estimated at 52.6 tpy in 2002, which represents approximately 3.1% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Oldham County is 45.7% and classified as high. The commuting traffic from Oldham County into other counties is significant at 66.8%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Oldham County were estimated at 537.32 tpy in 2002, which represents approximately 5.7% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Oldham County were estimated at 2137.8 tpy in 2002, which represents approximately 7.5% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Oldham County were estimated at 353.5 tpy in 2002, which represents approximately 9.4% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Oldham County were estimated at 109.7 tpy in 2002, which represents approximately 6.7% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Oldham County were estimated at 0.4 tpy in 2002, which represents approximately 3.5% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Oldham County were estimated at 717 tpy in 2002, which represents approximately 3.9% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Oldham County were estimated at 46.3 tpy in 2002, which represents approximately 1.1% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Oldham County were estimated at 198 tpy in 2002, which represents approximately 4.3% of the total of 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Oldham County were estimated at 635 tpy in 2002, which represents approximately 6.6% of the total 9580.1 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Oldham County were estimated at 199.3 tpy in 2002, which represents approximately 2.4% of the total of 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Oldham County.

In the Louisville area of evaluation, KY-IN, Oldham County contributes approximately:

- 3.0% of total VOC emissions (76,191 tpy)
- 2.6% of total NOx emissions (152,596 tpy)
- 0.4% of the total SO_x emissions (159,002 tpy)
- 2.5% of the total NH_3 emissions (10,210 tpy)
- 5.7% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

Based on data analysis done by ASIP and VISTAS, the pollutants of most concern regarding $PM_{2.5}$ formation are SO_2 and NO_x and direct PM. Oldham County contributes a relatively very small portion of the area's NOx emissions (2.6%) and the SO_2 emissions (0.4%).

The 48-hour back trajectory HYSPLITS for Indiana and Kentucky have been included in a separate section for the annual top ten maximum concentrations at each monitoring site in 2004-2006 for those days when the 24-hour ambient monitoring concentration for $PM_{2.5}$ exceeded 35 micrograms per cubic meter.

In Oldham County the predominant wind patterns are away from counties with violations and would have the small amount of emissions from Oldham County being transported away from monitors with violations.

The emissions data and other documentation presented indicate that Oldham County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Oldham County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

JEFFERSON COUNTY, KENTUCKY

Jefferson County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is located at the intersection of the I-65 North-South, I-71 North-South, and I-64 East-West interstate corridors in central Kentucky.

Geography/Topography

Jefferson County has a land area of 385 square miles and is the central county in the Kentucky portion of the Louisville MSA. The Ohio River forms the northern border of Jefferson County. It is located to the southwest of Oldham, to the west of Shelby County, to the northwest of Spencer County, and to the north of Bullitt County. It is also to the south of Clark County, Indiana, to the southeast of Floyd County, Indiana, and to the east of Harrison County, Indiana.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1-A) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Jefferson County resides with the Louisville Metro Air Pollution Control District, while the Kentucky Environmental and Public Cabinet provides oversight. Transportation planning for Jefferson County is performed by the Kentuckiana Regional Planning and Development Agency (KIPDA).

Air Monitoring

For the 2004 – 2006 monitoring period, three of the four Jefferson County $PM_{2.5}$ monitors have values in AQS exceeding the 3-year average of the 98^{th} percentile of the 24-hour average of the $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS – 35 micrograms per cubic meter). (See table 1)

However, in accordance with 40 C.F.R. 50.14(c)(3)(i), the Louisville Metro Air Pollution Control District has a pending request to U.S. EPA for consideration of ambient data to be excluded from NAAQS determination due to exceptional events. A

favorable determination of this request by U.S. EPA would deem all four monitors in Jefferson County in attainment of the 24-hour fine particulate NAAQS.

PM2.5 24-hour Standard/Excluding Flagged Data (parts per billion)*				
Site Name	2004	2005	2006	2004-2006
Southwick	29	37	30	32.0
Wyandotte	28	34	31	31.0
Barret	28	35	29	30.7
Watson	26	30	28	28.0

*data provided by Louisville Metro APCD

A violation of the $PM_{2.5}$ 24-hour NAAQS for 2004-2006 has been documented in Clark County, Indiana.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties in Kentucky, and for the Indiana counties of Clark and Floyd. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 701,500 persons living in Jefferson County. (See table3) That represents approximately 1822 persons per square mile. The population of Jefferson County is approximately 1.9% rural with 98.2% of the people living in incorporated areas. The largest city in Jefferson County is Louisville.

Jefferson County's population from 2000 through 2006 increased by approximately 1.1% (693,604 to 701,500). The population in the county is expected to increase overall by 4.4% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Jefferson County represents approximately 51.9% of the total population in the area of evaluation and 65.1% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Jefferson County were estimated at 4959.3 tpy in 2002, which represents approximately 30.1% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Jefferson County were estimated at 24,811 tpy in 2002, which represents approximately 37.0% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Jefferson County were estimated at 39,098 tpy in 2002, which represents approximately 26.3% of the total of 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Jefferson County were estimated at 823.6 tpy in 2002, which represents approximately 42.3% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Jefferson County were estimated at 39.5 tpy in 2002, which represents 43.2% of the total 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Jefferson County are subject to PSD requirements with New Source Review (NSR), CTG RACT and non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Jefferson County.

Onroad Mobile

Onroad mobile source VOC emissions from Jefferson County were estimated at 15,587.7 tpy in 2002, which represents approximately 49.1% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Jefferson County were estimated at 27,938.9 tpy in 2002, which represents approximately 52.8% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Jefferson County were estimated at 992.9 tpy in 2002, which represents approximately 49.8% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Jefferson County were estimated at 395.8 tpy in 2002, which represents approximately 48.1% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Jefferson County were estimated at 872.8 tpy in 2002, which represents approximately 51.9% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Jefferson County is 24.9% and classified as minimal. The commuting traffic from Jefferson County into other counties is not significant at 7.7%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Jefferson County were estimated at 4171.2 tpy in 2002, which represents approximately 44.0% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Jefferson County were estimated at 10,989.1 tpy in 2002, which represents approximately 38.5% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Jefferson County were estimated at 1428.8 tpy in 2002, which represents approximately 38.0% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Jefferson County were estimated at 720.4 tpy in 2002, which represents approximately 44.1% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Jefferson County were estimated at 4.4 tpy in 2002, which represents approximately 39.7% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Jefferson County were estimated at 3204.7 tpy 2002, which represents approximately 17.4% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Jefferson County were estimated at 234.1 tpy in 2002, which represents approximately 5.7% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Jefferson County were estimated at zero tpy in 2002, which represents no contribution to the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Jefferson County were estimated at 1082.7 tpy in 2002, which represents approximately 11.3% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Jefferson County were estimated at 165.86 tpy in 2002, which represents approximately 2.0% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

Jefferson County, based on 2004 – 2006 $PM_{2.5}$ monitoring data, and allowing for data impacted by exceptional events during those years, is meeting the $PM_{2.5}$ standard for the 24-hour average, as previously noted on page 16.

In the Louisville area of evaluation, KY-IN, Jefferson County contributes approximately:

- 36.6% of total VOC emissions (76,191 tpy)
- 41.9% of total NOx emissions (152,596 tpy)
- 26.1% of the total SO_x emissions (159,002 tpy)
- 10.6% of the total NH_3 emissions (10,210 tpy)
- 21.6% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

Based on data analysis done by ASIP and VISTAS, the pollutants of most concern regarding $PM_{2.5}$ formation are SO_2 and NO_x and direct PM. Jefferson County contributes a relatively large portion of the area's NOx emissions (41.9%) and the SO_2 emissions (26.1%).

The 48-hour back trajectory HYSPLITS for Indiana and Kentucky have been included in a separate section for the annual top ten maximum concentrations at each monitoring site in 2004-2006 for those days when the 24-hour ambient monitoring concentration for $PM_{2.5}$ exceeded 35 micrograms per cubic meter.

In addition, during 2005, several days of fires in Mississippi and Arkansas impacted $PM_{2.5}$ monitors across Kentucky. Two dates in particular September 10 and September 13 appear repeatedly in the maximum values report (See Table 9) for counties being evaluated for designation under the 24-hour $PM_{2.5}$ NAAQS.

In accordance with 40 C.F.R. 50.14(c)(3)(i), the Kentucky Environmental and Public Protection Cabinet made available the ambient air monitoring data requested for exclusion from National Ambient Air Quality Standard (NAAQS) determination, due to exceptional events. The *REQUEST FOR CONCURRENCE OF EXCEPTIONAL EVENT FLAGS ON $PM_{2.5}$ 2004-2006 DATA: Bullitt, Fayette, Kenton, McCracken and Warren Counties, Kentucky* document details the ambient air monitors operated by the Kentucky Division for Air Quality that were impacted by exceptional events and the $PM_{2.5}$ data requested for exclusion from the NAAQS determination in the years 2004-2006.

The following dates were requested.

Date	Site	Concentration	Event
6/21/2005	21-029-0006	35.1	Local fire/ Missouri fires
6/21/2005	21-145-1004	36.9	Local fire/ Missouri fires
9/10/2005	21-145-1004	39.6	Arkansas/Mississippi Fires
9/10/2005	21-117-0007	52.75	Arkansas/Mississippi Fires
9/10/2005	21-029-0006	39	Arkansas/Mississippi Fires
9/10/2005	21-067-0012	44.1	Arkansas/Mississippi Fires
9/10/2005	21-067-0014	38.2	Arkansas/Mississippi Fires
9/13/2005	21-067-0012	40.8	Arkansas/Mississippi Fires
9/13/2005	21-067-0014	35.1	Arkansas/Mississippi Fires
9/13/2005	21-117-0007	42.1	Arkansas/Mississippi Fires
9/13/2005	21-227-0007	35.1	Arkansas/Mississippi Fires
7/19/2006	21-029-0006	39	Arkansas and Local Fires
7/19/2006	21-145-1004	36.7	Arkansas and Local Fires

The public comment period relating to the exceptional event data was November 1 through December 1, 2007. Kentucky is currently awaiting concurrence from USEPA.

This information is being included here because many times these two September 2005 dates appeared as the highest maximum values for counties in the area of evaluation (see table 9). Satellite images submitted in the exclusion request to USEPA show the smoke plume settled widely over Kentucky. Meteorology also indicates very stagnate weather conditions over several days.

Kentucky wishes to consider the impact of these fires in Arkansas and Mississippi as exceptional events that made the 2005 $PM_{2.5}$ concentrations higher than otherwise would have occurred.

The monitoring and other documentation presented indicate that possible violations in Indiana are from localized impacts and therefore, Jefferson County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

HARDIN COUNTY, KENTUCKY

Hardin County is part of the Louisville area of evaluation, Kentucky-Indiana and is on the I-65 North-South interstate corridor and divided northeast to southwest by the Western Kentucky Parkway. It is located to the northeast of Grayson County, to the southwest of Bullitt and Nelson Counties, to the southeast of Meade County, to the northwest of Larue County, to the west of Larue County, to the north of Hart County, and to the west of Breckinridge County.

Geography/Topography

Hardin County has a land area of 628 square miles. The Ohio River forms the very north boundary of the county which also borders Harrison County, Indiana. The Salt River and the Rolling Fork River combine to form the northeastern boundary. Fort Knox Military Reservation comprises much of the northern portion of the county. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Hardin County area resides with the Kentucky Environmental Public Protection Cabinet. Transportation planning for Hardin County is performed by the Radcliff-Elizabethtown Metropolitan Planning Organization (REMPO) and the Kentucky Transportation Cabinet.

Air Monitoring

The Hardin County $PM_{2.5}$ monitor (21-093-0006) shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Bullitt County $PM_{2.5}$ monitor to the north shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which also achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

For the 2004-2006 monitoring period, there were no $PM_{2.5}$ monitors located in Oldham County.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Hardin County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 97,087 persons living in Hardin County. (See table 3) That represents approximately 155 persons per square mile. The population of Hardin County is approximately 63.7% rural with 36.3% of the people living in incorporated areas. The largest cities in Hardin County are Mount Washington and Shepherdsville.

Hardin County's population from 2000 through 2006 increased by approximately 3.1% (94,174 to 97,087). The population in the county is expected to increase overall by 15.2% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Hardin County represents approximately 7.2% of the total population in the area of evaluation and 9% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Source

Point source VOC emissions from Hardin County were estimated at 420.0 tpy in 2002, which represents approximately 2.5% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Hardin County were estimated at 100.3 tpy in 2002, which represents approximately 0.1% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Hardin County were estimated at 3.6 tpy in 2002, which represents nearly zero percent of the total of 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Hardin County were estimated at 86.3 tpy in 2002, which represents approximately 4.4% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Hardin County were estimated at 8.7 tpy in 2002, which represents approximately 9.5% of the total of 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Hardin County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Hardin County.

Onroad Mobile

Onroad mobile source VOC emissions from Hardin County were estimated at 3451.2 tons per year in 2002, which represents approximately 10.9% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation. (See chart Lou-2)

Onroad mobile source NO_x emissions from Hardin County were estimated at 4628.2 tpy in 2002, which represents approximately 8.8% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Hardin County were estimated at 191.4 tons per year in 2002, which represents approximately 9.6% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Hardin County were estimated at 77.8 tons per year in 2002, which represents approximately 9.5% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Hardin County were estimated at 155.1 tpy in 2002, which represents approximately 9.2% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Hardin County is 24.3% and classified as minimal. The commuting traffic from Hardin County into other counties is minimal at 19.6%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Hardin County were estimated at 696.0 tpy in 2002, which represents approximately 7.3% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Hardin County were estimated at 2350.8 tpy in 2002, which represents approximately 8.2% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Hardin County were estimated at 358.7 tpy in 2002, which represents approximately 9.5% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Hardin County were estimated at 128.8 tpy in 2002, which represents approximately 7.9% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Hardin County were estimated at 0.6 tpy in 2002, which represents approximately 5.3% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Hardin County were estimated at 3095.1 tpy in 2002, which represents approximately 16.8% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Hardin County were estimated at 1578.6 tpy in 2002, which represents approximately 38.3% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Hardin County were estimated at 1298.1 tpy in 2002, which represents approximately 28.1% of the total of 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Hardin County were estimated at 1029.0 tpy in 2002, which represents approximately 10.7% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Hardin County were estimated at 1086.6 tpy in 2002, which represents approximately 12.9% of the total of 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

The Hardin County $PM_{2.5}$ monitor (21-093-0006) shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

In the Louisville area of evaluation, KY-IN, Hardin County contributes approximately:

- 10.1% of total VOC emissions (76,191 tpy)
- 5.7% of total NOx emissions (152,596 tpy)
- 1.2% of the total SO_x emissions (159,002 tpy)
- 12.3% of the total NH_3 emissions (10,210tpy)
- 9.5% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

In addition, during 2005, several days of fires in Mississippi and Arkansas impacted $PM_{2.5}$ monitors across Kentucky. Two dates in particular September 10 and September 13 appear repeatedly in the maximum values report (See Table 9) for counties being evaluated for designation under the 24-hour $PM_{2.5}$ NAAQS.

In accordance with 40 C.F.R. 50.14(c)(3)(i), the Kentucky Environmental and Public Protection Cabinet made available the ambient air monitoring data requested for exclusion from National Ambient Air Quality Standard (NAAQS) determination, due to exceptional events. The *REQUEST FOR CONCURRENCE OF EXCEPTIONAL EVENT FLAGS ON $PM_{2.5}$ 2004-2006 DATA: Bullitt, Fayette, Kenton, McCracken and Warren Counties, Kentucky* document details the ambient air monitors operated by the Kentucky Division for Air Quality that were impacted by exceptional events and the $PM_{2.5}$ data requested for exclusion from the NAAQS determination in the years 2004-2006.

The following dates were requested.

Date	Site	Concentration	Event
6/21/2005	21-029-0006	35.1	Local fire/ Missouri fires
6/21/2005	21-145-1004	36.9	Local fire/ Missouri fires
9/10/2005	21-145-1004	39.6	Arkansas/Mississippi Fires
9/10/2005	21-117-0007	52.75	Arkansas/Mississippi Fires
9/10/2005	21-029-0006	39	Arkansas/Mississippi Fires
9/10/2005	21-067-0012	44.1	Arkansas/Mississippi Fires
9/10/2005	21-067-0014	38.2	Arkansas/Mississippi Fires
9/13/2005	21-067-0012	40.8	Arkansas/Mississippi Fires
9/13/2005	21-067-0014	35.1	Arkansas/Mississippi Fires
9/13/2005	21-117-0007	42.1	Arkansas/Mississippi Fires
9/13/2005	21-227-0007	35.1	Arkansas/Mississippi Fires
7/19/2006	21-029-0006	39	Arkansas and Local Fires
7/19/2006	21-145-1004	36.7	Arkansas and Local Fires

The public comment period relating to the exceptional event data was November 1 through December 1, 2007. Kentucky is currently awaiting concurrence from USEPA.

This information is being included here because many times these two September 2005 dates appeared as the highest maximum values for counties in the area of evaluation (see Table 9). Satellite images submitted in the exclusion request to USEPA show the smoke plume settled widely over Kentucky. Meteorology also indicates very stagnate weather conditions over several days.

These fires were a statewide event, and both September dates have been flagged in the AQS database for all $PM_{2.5}$ sites in Kentucky. Even though the affected concentrations are exceedances, not violations, Kentucky wishes to consider the impact of these fires in Arkansas and Mississippi as exceptional events that made the 2005 $PM_{2.5}$ concentrations higher than otherwise would have occurred. These high values should not be considered indications of any significant contribution from the counties into adjacent areas that may not currently be attaining the 24-hour $PM_{2.5}$

NAAQS (ie., Hamilton County, OH; Montgomery County, TN; and Jefferson County, KY).

The emissions data and other documentation presented indicate that Hardin County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Hardin County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

HENRY COUNTY, KENTUCKY

Henry County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is on the I-71 North-South interstate corridor. It is located to the north of Shelby County, to the south of Carroll County, to the east of Oldham County, to the west of Owen County, and to the northwest of Franklin County.

Geography/Topography

Henry County has a land area of 289 square miles and is the northeastern-most county in the entire area of evaluation. The Kentucky River forms the eastern county line. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Henry County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Henry County is performed by the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Henry County.

The Bullitt County $PM_{2.5}$ monitor to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor further to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Henry County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 16,025 persons living in Henry County. (See table 3) That represents approximately 55 persons per square mile. The population of Henry County is approximately 100% rural. The largest cities in Henry County are Eminence and New Castle.

Henry County's population from 2000 through 2006 increased by approximately 6.4% (15,060 to 16,025). The population in the county is expected to increase overall by 17.4% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Henry County represents approximately 1.2% of the total population in the area of evaluation and 1.5% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Henry County were estimated at 43.9 tpy in 2002, which represents approximately 0.3% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Henry County were estimated at 6.4 tpy in 2002, which represents approximately zero percent of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Henry County were estimated at 4.3 tpy in 2002, which represents approximately zero percent of the total of 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Henry County were estimated at 9.2 tpy in 2002, which represents approximately 0.5% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Henry County were estimated at zero tpy in 2002, which represents no contribution to the total 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Henry County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Henry County.

Onroad Mobile

Onroad mobile source VOC emissions from Henry County were estimated at 608.7 tpy in 2002, which represents approximately 1.9% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Henry County were estimated at 1091 tpy in 2002, which represents approximately 2.1% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Henry County were estimated at 42.2 tpy in 2002, which represents approximately 2.1% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Henry County were estimated at 19.2 tpy in 2002, which represents approximately 2.3% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Henry County were estimated at 30.2 tpy in 2002, which represents approximately 1.8% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Henry County is 28.5% and classified as minimal. The commuting traffic from Henry County into other counties is significant at 59.4%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Henry County were estimated at 110.2 tpy in 2002, which represents approximately 1.2% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Henry County were estimated at 305.3 tpy in 2002, which represents approximately 1.1% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Henry County were estimated at 25.4 tpy in 2002, which represents approximately 0.7% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Henry County were estimated at 18.9 tpy in 2002, which represents approximately 1.2% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Henry County were estimated at 0.11 tpy in 2002, which represents approximately 1% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Henry County were estimated at 631.9 tpy 2002, which represents approximately 3.4% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Henry County were estimated at 149.6 tpy in 2002, which represents approximately 3.6% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Henry County were estimated at 88.7 tpy in 2002, which represents approximately 1.9% of the total 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Henry County were estimated at 401.1 tpy in 2002, which represents approximately 4.2% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Henry County were estimated at 436.5 tpy in 2002, which represents approximately 5.2% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Henry County.

In the Louisville area of evaluation, KY-IN, Henry County contributes approximately:

- 1.8% of total VOC emissions (76,191 tpy)
- 1.0% of total NOx emissions (152,596 tpy)
- 0.1% of the total SO_x emissions (159,002 tpy)
- 4.6% of the total NH_3 emissions (10,210 tpy)
- 3.2% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

In Henry County the predominant wind patterns are away from counties with violations and would have the small amount of emissions from Henry County being transported away from monitors with violation.

The emissions data and other documentation presented indicate that Henry County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Henry County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

MEADE COUNTY, KENTUCKY

Meade County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and includes the Fort Knox Military Reservation in the eastern portion of the county. It is located to the northwest of Hardin County, to the northeast of Breckinridge County, and directly to the south of Harrison County, Indiana, across the Ohio River.

Geography/Topography

Meade County has a land area of 308 square miles and is the western-most county in the entire area of evaluation. The Ohio River forms the northern county boundary. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Meade County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Meade County is performed by the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Meade County.

The Hardin County $PM_{2.5}$ monitor to the east shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Bullitt County $PM_{2.5}$ monitor further to the east shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which also achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Meade County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 27,994 persons living in Meade County. (See table 3) That represents approximately 91 persons per square mile. The population of Meade County is approximately 83% rural with 17% of the people living in incorporated areas. The largest cities in Meade County are Brandenburg and Muldraugh.

Meade County's population from 2000 through 2006 increased by approximately 6.2% (26,349 to 27,994). The population in the county is expected to increase overall by 16.3% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Meade County represents approximately 2.1% of the total population in the area of evaluation and 2.6% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Meade County were estimated at 193.2 tpy in 2002, which represents approximately 1.2% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Meade County were estimated at 97.9 tpy in 2002, which represents approximately 0.1% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Meade County were estimated at 80.9 tpy in 2002, which represents approximately 0.1% of the total 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Meade County were estimated at 40.8 tpy in 2002, which represents approximately 2.1% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Meade County were estimated at zero tpy in 2002, which represents no contribution to the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Meade County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Meade County.

Onroad Mobile

Onroad mobile source VOC emissions from Meade County were estimated at 614.3 tpy in 2002, which represents approximately 1.9% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Meade County were estimated at 862.1 tpy in 2002, which represents approximately 1.6% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Meade County were estimated at 38 tpy in 2002, which represents approximately 1.9% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Meade County were estimated at 17 tpy in 2002, which represents approximately 2.1% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Meade County were estimated at 27.9 tpy in 2002, which represents approximately 1.7% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Meade County is 27.1% and classified as minimal. The commuting traffic from Meade County into other counties is significant at 65.7%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Meade County were estimated at 672.9 tpy in 2002, which represents approximately 7.1% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Meade County were estimated at 3059 tpy in 2002, which represents approximately 10.7% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Meade County were estimated at 581.6 tpy in 2002, which represents approximately 15.4% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Meade County were estimated at 143.1 tpy in 2002, which represents approximately 8.8% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Meade County were estimated at 0.2 tpy in 2002, which represents approximately 1.8% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Meade County were estimated at 541.2 tpy 2002, which represents approximately 2.9% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Meade County were estimated at 52.7 tpy in 2002, which represents approximately 1.3% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Meade County were estimated at 33 tpy in 2002, which represents approximately 0.7% of the total 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Meade County were estimated at 367.3 tpy in 2002, which represents approximately 3.8% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Meade County were estimated at 413 tpy in 2002, which represents approximately 4.9% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Meade County.

In the Louisville area of evaluation, KY-IN, Meade County contributes approximately:

- 2.7% of total VOC emissions (76,191 tpy)
- 2.7% of total NOx emissions (152,596 tpy)
- 0.5% of the total SO_x emissions (159,002 tpy)
- 4.1% of the total NH_3 emissions (10,210 tpy)
- 4.3% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

The emissions data and other documentation presented indicate that Meade County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Meade County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

NELSON COUNTY, KENTUCKY

Nelson County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is divided in half east-west by the Blue Grass Parkway. It is located to the east of Hardin County, to the west of Washington County, to the southeast of Bullitt County, and to the southwest of Spencer County. It is also northeast of Larue County and northwest of Marion County.

Geography/Topography

Nelson County has a land area of 423 square miles and is the southeastern-most county in the entire area of evaluation. Taylorsville Lake forms the northeastern county corner, and Knobs State Forest is located in the western portion of the county. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Nelson County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Nelson County is performed by the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Nelson County.

The Bullitt County $PM_{2.5}$ monitor to the northwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor to the west shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter,

which also achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Nelson County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 42,102 persons living in Nelson County. (See table 3) That represents approximately 100 persons per square mile. The population of Nelson County is approximately 62.6% rural with 37.4% of the people living in incorporated areas. The largest cities in Nelson County are Bardstown and Bloomfield.

Nelson County's population from 2000 through 2006 increased by approximately 12.3% (37,477 to 42,102). The population in the county is expected to increase overall by 29.7% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Nelson County represents approximately 3.1% of the total population in the area of evaluation and 3.9% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Nelson County were estimated at 5428.4 tpy in 2002, which represents approximately 32.9% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Nelson County were estimated at 163.5 tpy in 2002, which represents approximately 0.2% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Nelson County were estimated at 344.2 tpy in 2002, which represents approximately 0.2% of the total 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Nelson County were estimated at 71.6 tpy in 2002, which represents approximately 3.7% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Nelson County were estimated at zero tpy in 2002, which represents no contribution to the total 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Nelson County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Nelson County.

Onroad Mobile

Onroad mobile source VOC emissions from Nelson County were estimated at 1112 tpy in 2002, which represents approximately 3.5% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Nelson County were estimated at 1483.4 tpy in 2002, which represents approximately 2.8% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Nelson County were estimated at 65.4 tpy in 2002, which represents approximately 3.3% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Nelson County were estimated at 27.9 tpy in 2002, which represents approximately 3.4% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Nelson County were estimated at 50.4 tpy in 2002, which represents approximately 3.0% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Nelson County is 18.7% and classified as minimal. The commuting traffic from Nelson County into other counties is high at 36.4%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Nelson County were estimated at 179.9 tpy in 2002, which represents approximately 1.9% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Nelson County were estimated at 423.6 tpy in 2002, which represents approximately 1.5% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Nelson County were estimated at 39.1 tpy in 2002, which represents approximately 1.0% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Nelson County were estimated at 34.2 tpy in 2002, which represents approximately 2.1% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Nelson County were estimated at 0.3 tpy in 2002, which represents approximately 2.7% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Nelson County were estimated at 1077 tpy 2002, which represents approximately 5.8% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Nelson County were estimated at 293.4 tpy in 2002, which represents approximately 7.1% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Nelson County were estimated at 204.7 tpy in 2002, which represents approximately 4.4% of the total 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Nelson County were estimated at 708 tpy in 2002, which represents approximately 7.4% of the total 9580.1 tpy of the overall $PM_{2.5}$ area mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Nelson County were estimated at 1034 tpy in 2002, which represents approximately 12.3% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Nelson County.

In the Louisville area of evaluation, KY-IN, Nelson County contributes approximately:

- 10.2% of total VOC emissions (76,191 tpy)
- 1.5% of total NOx emissions (152,596 tpy)
- 0.4% of the total SO_x emissions (159,002 tpy)
- 10.6% of the total NH_3 emissions (10,210 tpy)
- 6.0% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

The emissions data and other documentation presented indicate that Nelson County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Nelson County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

SHELBY COUNTY, KENTUCKY

Shelby County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is divided east-west by Interstate Highway 64. It is located to the east of Jefferson County, to the west of Franklin County, to the southeast of Oldham County, and to the south of Henry County. It is also northeast of Spencer County and northwest of Anderson County.

Geography/Topography

Shelby County has a land area of 384 square miles and Guist Creek Lake State Park is located in the center of the county. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Shelby County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Shelby County is performed by the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Shelby County.

The Bullitt County $PM_{2.5}$ monitor to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor further to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which also achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Shelby County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 39,717 persons living in Shelby County. (See table 3) That represents approximately 103 persons per square mile. The population of Shelby County is approximately 60% rural with 40% of the people living in incorporated areas. The largest cities in Shelby County are Shelbyville and Simpsonville.

Shelby County's population from 2000 through 2006 increased by approximately 19.1% (33,337 to 39,717). The population in the county is expected to increase overall by 34.6% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Shelby County represents approximately 2.9% of the total population in the area of evaluation and 3.7% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Shelby County were estimated at 409.3 tpy in 2002, which represents approximately 2.5% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Shelby County were estimated at 59.5 tpy in 2002, which represents approximately 0.1% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Shelby County were estimated at 0.5 tpy in 2002, which represents approximately zero percent of the total 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Shelby County were estimated at 50.8 tpy in 2002, which represents approximately 2.6% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Shelby County were estimated at zero tpy in 2002, which represents no contribution to the total 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Shelby County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Shelby County.

Onroad Mobile

Onroad mobile source VOC emissions from Shelby County were estimated at 1299.1 tpy in 2002, which represents approximately 4.1% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Shelby County were estimated at 2246 tpy in 2002, which represents approximately 4.2% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Shelby County were estimated at 85.8 tpy in 2002, which represents approximately 4.3% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Shelby County were estimated at 38 tpy in 2002, which represents approximately 4.6% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Shelby County were estimated at 63.6 tpy in 2002, which represents approximately 3.8% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Shelby County is 37% and classified as high. The commuting traffic from Shelby County into other counties is high at 44.4%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Shelby County were estimated at 369.2 tpy in 2002, which represents approximately 3.9% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Shelby County were estimated at 632.9 tpy in 2002, which represents approximately 2.2% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Shelby County were estimated at 53.5 tpy in 2002, which represents approximately 1.4% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Shelby County were estimated at 47.2 tpy in 2002, which represents approximately 2.9% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Shelby County were estimated at 0.38 tpy in 2002, which represents approximately 3.4% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Shelby County were estimated at 1221.6 tpy 2002, which represents approximately 6.6% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Shelby County were estimated at 526.8 tpy in 2002, which represents approximately 12.8% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Shelby County were estimated at 289.7 tpy in 2002, which represents approximately 6.3% of the total 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Shelby County were estimated at 599 tpy in 2002, which represents approximately 6.3% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Shelby County were estimated at 677.1 tpy in 2002, which represents approximately 8.0% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Shelby County.

In the Louisville area of evaluation, KY-IN, Shelby County contributes approximately:

- 4.3% of total VOC emissions (76,191 tpy)
- 2.3% of total NOx emissions (152,596 tpy)
- 0.3% of the total SO_x emissions (159,002 tpy)
- 7.3% of the total NH_3 emissions (10,210 tpy)
- 5.3% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

The emissions data and other documentation presented indicate that Shelby County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Shelby County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

SPENCER COUNTY, KENTUCKY

Spencer County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is divided in half north-south Highway 55. It is located to the west of Anderson County, to the east of Bullitt County, to the southeast of Jefferson County, and to the southwest of Shelby County. It is also north of Nelson County.

Geography/Topography

Spencer County has a land area of 186 square miles and Taylorsville Lake crisscrosses much of the eastern portion of the county. The East Fork of Cox Creek forms a portion of the southwestern county boundary. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Spencer County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Spencer County is performed by the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Spencer County.

The Bullitt County $PM_{2.5}$ monitor to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor further to the southwest shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality

Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.
However, because $PM_{2.5}$ monitors in Jefferson County, Kentucky, and in Clark County, Indiana, have $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Spencer County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 16,475 persons living in Spencer County. (See table 3) That represents approximately 89 persons per square mile. The population of Spencer County is approximately 100% rural. The largest city in Spencer County is Taylorsville.

Spencer County's population from 2000 through 2006 increased by approximately 40% (11,766 to 16,475). The population in the county is expected to increase overall by 39.3% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Spencer County represents approximately 1.2% of the total population in the area of evaluation and 1.5% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Spencer County were estimated at zero tpy in 2002, which represents no contribution to the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Spencer County were estimated at zero tpy in 2002, which represents no contribution to the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Spencer County were estimated at zero tpy in 2002, which represents no contribution to the total 148,628.4 tpy of the overall SO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Spencer County were estimated at 0.5 tpy in 2002, which represents nearly zero percent of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Spencer County were estimated at zero tpy in 2002, which represents no contribution to the total 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Spencer County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Spencer County.

Onroad Mobile

Onroad mobile source VOC emissions from Spencer County were estimated at 258.3 tpy in 2002, which represents approximately 0.8% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Spencer County were estimated at 372.9 tpy in 2002, which represents approximately 0.7% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Spencer County were estimated at 16.5 tpy in 2002, which represents approximately 0.8% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Spencer County were estimated at 7.5 tpy in 2002, which represents approximately 0.9% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Spencer County were estimated at 11.8 tpy in 2002, which represents approximately 0.7% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Spencer County is 25.6% and classified as minimal. The commuting traffic from Spencer County into other counties is significant at 77.9%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Spencer County were estimated at 187.8 tpy in 2002, which represents approximately 2.0% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See hart Lou-4)

Nonroad mobile source NO_x emissions from Spencer County were estimated at 130.9 tpy in 2002, which represents approximately 0.5% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Spencer County were estimated at 15 tpy in 2002, which represents approximately 0.4% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Spencer County were estimated at 15 tpy in 2002, which represents approximately 0.9% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Spencer County were estimated at 0.1 tpy in 2002, which represents approximately 1.1% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Spencer County were estimated at 189.6 tpy 2002, which represents approximately 1.0% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Spencer County were estimated at 24.9 tpy in 2002, which represents approximately 0.6% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Spencer County were estimated at 10.2 tpy in 2002, which represents approximately 0.2% of the total 4615.5 tpy of the overall SO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Spencer County were estimated at 290.8 tpy in 2002, which represents approximately 3.0% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Spencer County were estimated at 193.8 tpy in 2002, which represents approximately 2.3% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Spencer County.

In the Louisville area of evaluation, KY-IN, Spencer County contributes approximately:

- 0.8% of total VOC emissions (76,191 tpy)
- 0.3% of total NOx emissions (152,596 tpy)
- 0% of the total SO_x emissions (159,002 tpy)
- 2.0% of the total NH_3 emissions (10,210 tpy)
- 2.2% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

The emissions data and other documentation presented indicate that Spencer County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation.

Therefore, Spencer County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

TRIMBLE COUNTY, KENTUCKY

Trimble County is part of the Louisville, Kentucky-Indiana Metropolitan Statistical Area (MSA) and is divided north-south by Highway 421. It is located to the west of Carroll County, to the northwest of Henry County, and to the northeast of Oldham County. It is also to the east of Clark County, Indiana directly across the Ohio River.

Geography/Topography

Trimble County has a land area of 149 square miles and the Little Kentucky River winds across the southeastern portion of the county. The Ohio River, with Indiana across the river, forms the north and west boundaries of the county. The county geographically is in the Outer Bluegrass Region.

Meteorological Information

Wind speed and wind direction data collected by the Division from the Bullitt County air monitoring site for the period 2004-2006 shows that the majority of the time the wind in the area came from the southwest and west southwest, and typically at 6-12 miles per hour. (See figure 1) According to the Louisville site of the University of Kentucky Agricultural Weather Center, the average high temperature for July for the area from 2004 through 2006 was 86°F and the average low was 67°F. The average precipitation for the same period was 6.1 inches.

Planning

The authority for air quality planning in the Trimble County area resides with the Kentucky Environmental and Public Protection Cabinet. Transportation planning for Trimble County is performed by the Kentucky Transportation Cabinet.

Air Monitoring

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Trimble County.

The Bullitt County $PM_{2.5}$ monitor to the south shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-average is 33.8 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

The Hardin County $PM_{2.5}$ monitor further to the south shows the 3-year average (2004-2006) of the annual 98^{th} percentile of the 24-hour average is 33.2 micrograms per cubic meter, which achieves the $PM_{2.5}$ 24-hour National Ambient Air Quality Standard (NAAQS - 35 micrograms per cubic meter) and is classified as a county in attainment.

However, because the $PM_{2.5}$ monitor in Clark County, Indiana, has $PM_{2.5}$ 24-hour average values exceeding the NAAQS, information for Trimble County is being presented in this document.

The monitoring information for 2006 is complete and the latest available for Bullitt, Hardin, and Jefferson Counties, Kentucky, and for Clark and Floyd Counties, Indiana. (See table 1)

Population

Based on projections to 2006 from the 2000 census data, there are 9,074 persons living in Trimble County. (See table 3) That represents approximately 61 persons per square mile. The population of Trimble County is approximately 94.1% rural with 5.9% of the people living in incorporated areas. The largest cities in Trimble County are Bedford and Milton.

Trimble County's population from 2000 through 2006 increased by approximately 11.7% (8,125 to 9,07). The population in the county is expected to increase overall by 40.7% between 2000 and 2015. (See table 2)

Based on 2006 population data for the Louisville area, Trimble County represents approximately 0.7% of the total population in the area of evaluation and 0.8% of the Kentucky portion of the area. (See table 3)

Air Emissions

The emissions presented in this document are in tons per year (tpy) from the VISTAS BaseG 2002 modeling inventories. (See tables 4 through 8)

Point Sources

Point source VOC emissions from Trimble County were estimated at 52.4 tpy in 2002, which represents approximately 0.3% of the total 16,488.7 tpy of the overall VOC point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-1)

Point source NO_x emissions from Trimble County were estimated at 5176 tpy in 2002, which represents approximately 7.7% of the total 67,042.3 tpy of the overall NO_x point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-7)

Point source SO_x emissions from Trimble County were estimated at 8395.2 tpy in 2002, which represents approximately 5.6% of the total 148,628.4 tpy of the overall SO_x

point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-13)

Point source $PM_{2.5}$ emissions from Trimble County were estimated at 116.5 tpy in 2002, which represents approximately 6.0% of the total 1947.6 tpy of the overall $PM_{2.5}$ point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-19)

Point source NH_3 emissions from Trimble County were estimated at 35.9 tpy in 2002, which represents approximately 39.2% of the total 91.6 tpy of the overall NH_3 point source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-25)

Point sources located within Trimble County are subject to PSD requirements, non-CTG RACT requirements, Maximum Achievable Control Technology (MACT) requirements for sources of Hazardous Air Pollutants (HAPS), and New Source Performance Standards (NSPS). Sources are also subject to applicable requirements imposed by the Clean Air Interstate Rule (CAIR), the Clean Air Mercury Rule (CAMR), and the NOx SIP Call. Also 401 KAR 50:012 applies to sources statewide, requiring that "all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical." Additionally, any controls imposed as a result of previous nonattainment designations are required to remain in Trimble County.

Onroad Mobile

Onroad mobile source VOC emissions from Trimble County were estimated at 181.1 tpy in 2002, which represents approximately 0.6% of the total 31,778.2 tpy of the overall VOC onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-2)

Onroad mobile source NO_x emissions from Trimble County were estimated at 272.6 tpy in 2002, which represents approximately 0.5% of the total 52,873.1 tpy of the overall NO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-8)

Onroad mobile source SO_x emissions from Trimble County were estimated at 11.7 tpy in 2002, which represents approximately 0.6% of the total 1993.6 tpy of the overall SO_x onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-14)

Onroad mobile source $PM_{2.5}$ emissions from Trimble County were estimated at 5.3 tpy in 2002, which represents approximately 0.6% of the total 822.9 tpy of the overall $PM_{2.5}$ onroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-20)

Onroad mobile source NH_3 emissions from Trimble County were estimated at 8.4 tpy in 2002, which represents approximately 0.5% of the total 1680.8 tpy of the overall NH_3 onroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-26)

Based on information obtained from the Kentucky Transportation Cabinet, commuting traffic from other counties into Trimble County is 25.7% and classified as minimal. The commuting traffic from Trimble County into other counties is significant at 76.9%.

Commuting Classifications	
Not Significant	0-10%
Minimal	11-30%
High	31-50%
Significant	51% or more

Nonroad Mobile

Nonroad mobile source VOC emissions from Trimble County were estimated at 289.5 tpy in 2002, which represents approximately 3.1% of the total 9471.5 tpy of the overall VOC nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-4)

Nonroad mobile source NO_x emissions from Trimble County were estimated at 1795.4 tpy in 2002, which represents approximately 6.3% of the total 28,560.4 tpy of the overall NO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-10)

Nonroad mobile source SO_x emissions from Trimble County were estimated at 330.9 tpy in 2002, which represents approximately 8.8% of the total 3764.2 tpy of the overall SO_x nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-16)

Nonroad mobile source $PM_{2.5}$ emissions from Trimble County were estimated at 92.2 tpy in 2002, which represents approximately 5.6% of the total 1631.8 tpy of the overall $PM_{2.5}$ nonroad mobile source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-22)

Nonroad mobile source NH_3 emissions from Trimble County were estimated at 0.2 tpy in 2002, which represents approximately 2.1% of the total 11.1 tpy of the overall NH_3 nonroad mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-28)

Area Sources

Area source VOC emissions from Trimble County were estimated at 141.4 tpy 2002, which represents approximately 0.8% of the total 18,452.4 tpy of the overall VOC area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-3)

Area source NO_x emissions from Trimble County were estimated at 18.3 tpy in 2002, which represents approximately 0.4% of the total 4119.8 tpy of the overall NO_x area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-9)

Area source SO_x emissions from Trimble County were estimated at 21.7 tpy in 2002, which represents approximately 0.5% of the total 4615.5 tpy of the overall SO_x area mobile source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-15)

Area source $PM_{2.5}$ emissions from Trimble County were estimated at 158.8 tpy in 2002, which represents approximately 1.7% of the total 9580.1 tpy of the overall $PM_{2.5}$ area source emissions from the Louisville Area of evaluation, KY-IN. (See chart Lou-21)

Area source NH_3 emissions from Trimble County were estimated at 181.6 tpy in 2002, which represents approximately 2.2% of the total 8427.0 tpy of the overall NH_3 area source emissions from the Louisville area of evaluation, KY-IN. (See chart Lou-27)

Comparison of Total Emissions

A comparison of total emissions across the entire Kentucky and Indiana area of evaluation was performed using the 2002 VISTAS BaseG Emission Inventory data.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-11 and Lou-12 provide a comparison of NO_x emissions across the entire region.

Charts Lou-17 and Lou-18 provide a comparison of SO_x emissions across the entire region.

Charts Lou-5 and Lou-6 provide a comparison of VOC emissions across the entire region.

Charts Lou-23 and Lou-24 provide a comparison of PM2.5 emissions across the entire region.

Charts Lou-29 and Lou-30 provide a comparison of VOC emissions across the entire region.

Conclusion and Recommendation

For the 2004 – 2006 monitoring period, there were no $PM_{2.5}$ monitors located in Trimble County.

In the Louisville area of evaluation, KY-IN, Trimble County contributes approximately:

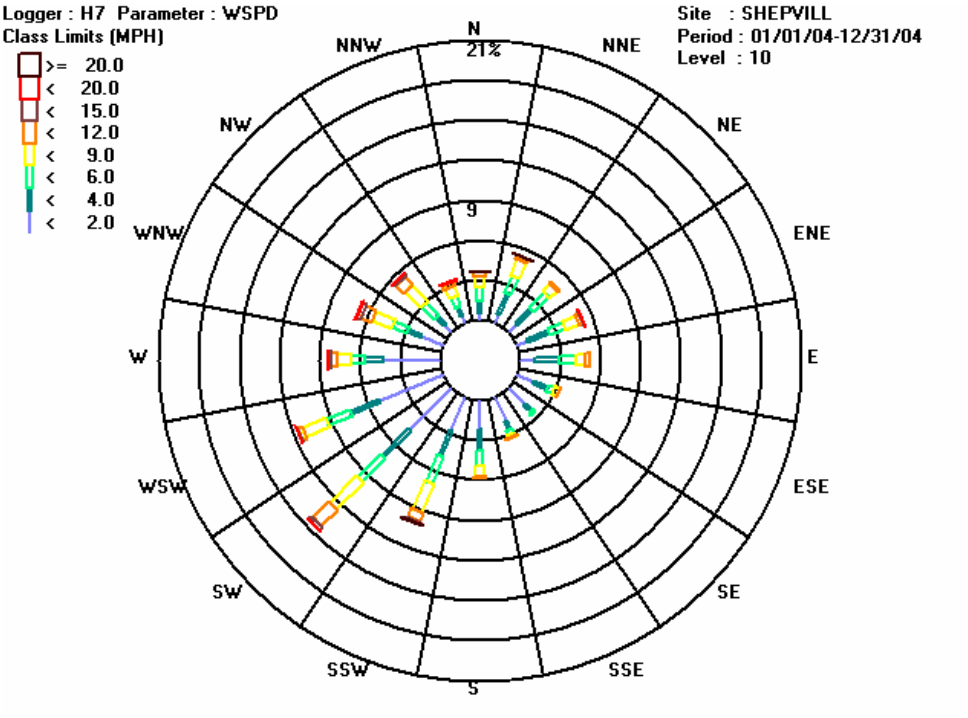
- 0.9% of total VOC emissions (76,191 tpy)
- 4.8% of total NOx emissions (152,596 tpy)
- 5.5% of the total SO_x emissions (159,002 tpy)
- 2.2% of the total NH_3 emissions (10,210 tpy)
- 2.7% of the total $PM_{2.5}$ emissions (13,982 tpy)

See charts Lou-6 for VOC, Lou-12 for NO_x, Lou-18 for SO_x, Lou-24 for $PM_{2.5}$, and Lou-30 for NH_3.

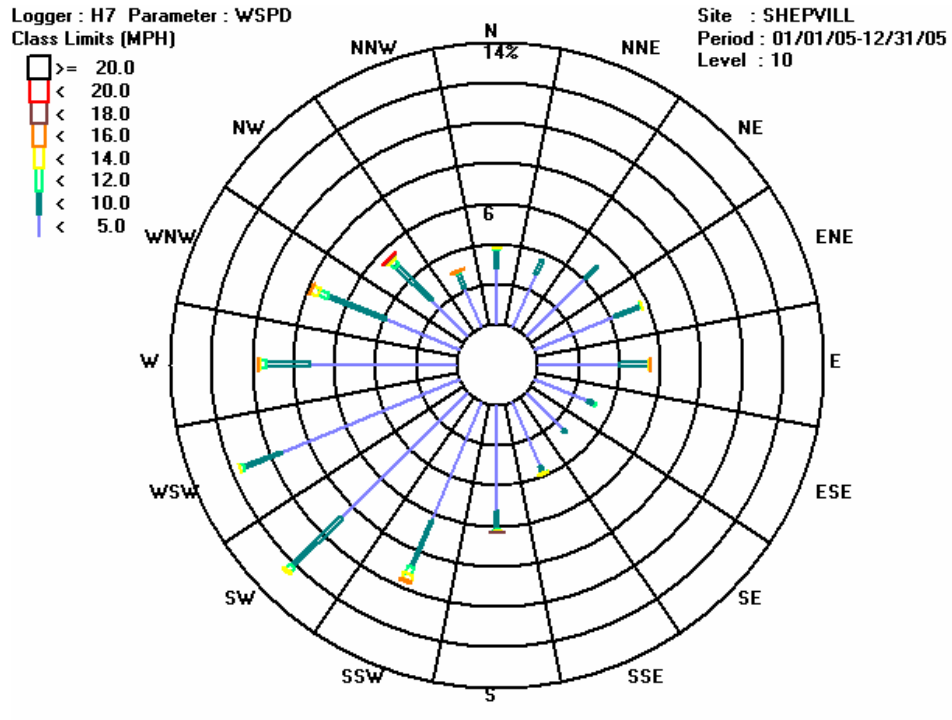
The emissions data and other documentation presented indicate that Trimble County, Kentucky, does not contribute a significant amount of $PM_{2.5}$ or emissions that contribute to $PM_{2.5}$ formation in the Louisville area of evaluation, KY-IN.

Therefore, Trimble County should be designated attainment for the $PM_{2.5}$ 24-hour standard.

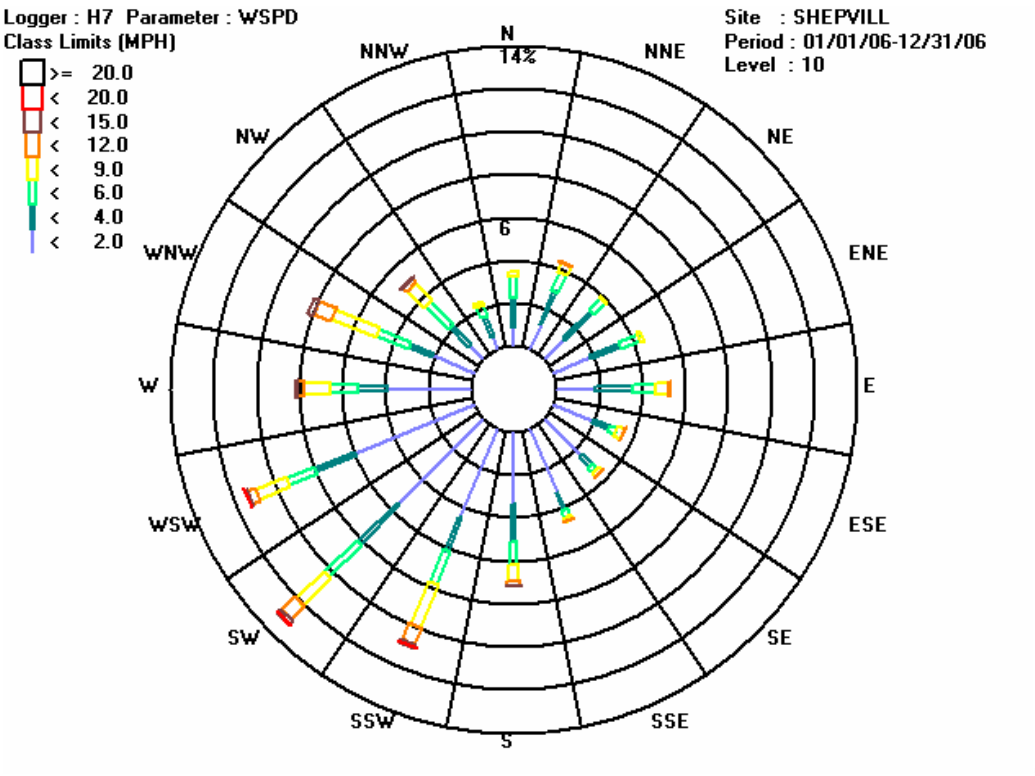
Figure 1
Louisville Area of Evaluation
Wind Rose Patterns



2004



2005


Logger : H7 Parameter : WSPD
Class Limits (MPH)
>= 20.0
< 20.0
< 15.0
< 12.0
< 9.0
< 6.0
< 4.0
< 2.0
Site : SHEPVILL
Period : 01/01/06-12/31/06
Level : 10
N
14%
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
6

2006

Table 1
Louisville Area of Evaluation
3-year Average* of Annual 24-hour for $PM_{2.5}$
(micrograms per cubic meter)

Monitor	2004	2005	2006	3-year Average
Kentucky				
Bulllitt	28.9	39.0	33.5	33.8
Hardin	27.8	35.1	31.8	31.6
Henry	-	-	-	n/a
Jefferson				
37th & Southern	31.1	42.9	36.0	36.7**
Barret	28.8	43.2	36.7	36.2**
Beecher	30.6	40.1	36.3	35.7**
Watson	25.8	36.5	32.5	31.6**
Meade	-	-	-	n/a
Nelson	-	-	-	n/a
Oldham	-	-	-	n/a
Shelby	-	-	-	n/a
Spencer	-	-	-	n/a
Trimble	-	-	-	n/a
Indiana				
Clark	28.4	45.5	35.9	36.6
Floyd	26.7	40.1	28.2	29.7
Jefferson	-	-	-	n/a
Harrison	-	-	-	n/a
Washington	-	-	-	n/a

* NAAQS 3-year average is calculated using the annual 98th percentile of the 24-hour concentration.

** U.S. EPA approval of exceptional monitoring data would show these monitors in attainment.

n/a indicates no monitor data for that county.

Table 2
Kentucky Portion of the Area of Evaluation
Population Growth Data

County	Census 2000	2006*	%Growth 2000-2006	2015*	%Growth 2000 - 2015
Bullitt	61,236	72,851	19.0%	78,222	27.7%
Hardin	94,174	97,087	3.1%	108,505	15.2%
Henry	15,060	16,025	6.4%	17,675	17.4%
Jefferson	693,604	701,500	1.1%	724,447	4.4%
Meade	26,349	27,994	6.2%	30,636	16.3%
Nelson	37,477	42,102	12.3%	48,601	29.7%
Oldham	46,178	55,285	18.6%	63,516	37.5%
Shelby	33,337	39,717	19.1%	44,882	34.6%
Spencer	11,766	16,475	40.0%	22,943	39.3%
Trimble	8,125	9,074	11.7%	11,434	40.7%

*U.S. Census Bureau projections to July 1, 2006 and 2015

Table 3
Area of Evaluation
2006 Estimated Population Data

	2006*	% of Total	
Kentucky		of KY Portion	of Area
Bullitt	72,851	6.8%	5.4%
Hardin	97,087	9.0%	7.2%
Henry	16,025	1.5%	1.2%
Jefferson	701,500	65.1%	51.9%
Meade	27,994	2.6%	2.1%
Nelson	42,102	3.9%	3.1%
Oldham	55,285	5.1%	4.1%
Shelby	39,717	3.7%	2.9%
Spencer	16,475	1.5%	1.2%
Trimble	9,074	0.84%	0.67%
KY TOTAL	1,078,110		79.7%
Indiana		of IN Portion	of Area
Clark	103,569	37.8%	8.2%
Floyd	72,570	26.5%	5.8%
Harrison	36,992	13.5%	2.9%
Jefferson	32,668	11.9%	2.6%
Washington	28,062	10.2%	2.2%
IN TOTAL	273,861		20.3%
Total Estimated Population	1,351,971		

*U.S. Census Bureau estimated for 2006.

Table 4
2002 VISTAS Louisville Area of Evaluation
Total VOC Emissions
(tons per year)

	VOC				
County	Point	Area	Mobile	Nonroad	Total
KENTUCKY					
Bullitt	2,689.03	983.73	1,598.02	506.49	5,777.27
Hardin	420.00	3,095.12	3,451.16	696.02	7,662.30
Henry	43.87	631.93	608.70	110.15	1,394.65
Jefferson	4,959.32	3,204.71	15,587.68	4,171.23	27,922.94
Meade	193.24	541.21	614.26	672.92	2,021.63
Nelson	5,428.37	1,077.04	1,111.55	179.85	7,796.81
Oldham	67.17	717.02	981.30	537.32	2,302.81
Shelby	409.26	1,221.61	1,299.08	369.18	3,299.13
Spencer	0.00	189.64	258.34	187.81	635.79
Trimble	52.41	141.39	181.11	289.50	664.41
KY Total	14,262.67	11,803.40	25,691.19	7,720.47	59,477.72
INDIANA					
Clark, IN	1,107.00	2,343.00	2,253.00	670.00	6,373.00
Floyd, IN	305.00	1,596.00	1,514.00	455.00	3,870.00
Harrison, IN	113.00	999.00	1,023.00	211.00	2,346.00
Jefferson, IN	296.00	767.00	720.00	273.00	2,056.00
Washington, IN	405.00	944.00	577.00	142.00	2,068.00
IN Total	2,226.00	6,649.00	6,087.00	1,751.00	16,713.00
Total Emissions	16,488.67	18,452.40	31,778.19	9,471.47	76,190.72

Table 5
2002 VISTAS Louisville Area of Evaluation
Total NO_x Emissions
(tons per year)

County	NOx				
	Point	Area	Mobile	Nonroad	Total
KENTUCKY					
Bullitt	221.39	51.12	3,209.62	577.66	4,059.79
Hardin	100.34	1,578.63	4,628.17	2,350.81	8,657.95
Henry	6.43	149.64	1,090.62	305.32	1,552.01
Jefferson	24,811.08	234.09	27,938.88	10,989.06	63,973.11
Meade	97.92	52.65	862.11	3,058.96	4,071.64
Nelson	163.46	293.44	1,483.41	423.62	2,363.93
Oldham	41.30	46.29	1,717.81	2,137.81	3,943.21
Shelby	59.52	526.78	2,245.96	632.91	3,465.17
Spencer	0.00	24.85	372.88	130.85	528.58
Trimble	5,175.89	18.27	272.61	1,795.35	7,262.12
KY Total	30,677.33	2,975.76	43,822.06	22,402.35	99,877.50
INDIANA					
Clark	1,687.00	400.00	3,325.00	3,180.00	8,592.00
Floyd	6,145.00	321.00	2,229.00	894.00	9,589.00
Harrison	11.00	151.00	1,737.00	943.00	2,842.00
Jefferson	28,503.00	146.00	950.00	553.00	30,152.00
Washington	19.00	126.00	810.00	588.00	1,543.00
IN Total	36,365.00	1,144.00	9,051.00	6,158.00	52,718.00
Total Emissions	67,042.33	4,119.76	52,873.06	28,560.35	152,595.50

Table 6
2002 VISTAS Louisville Area of Evaluation
SOx Emissions
(tons per year)

County	SOx				
	Point	Area	Mobile	Nonroad	Total
KENTUCKY					
Bullitt	390.76	93.40	96.60	49.83	630.59
Hardin	3.61	1,298.13	191.44	358.66	1,851.83
Henry	4.30	88.71	42.18	25.35	160.54
Jefferson	39,097.96	0.00	992.93	1,428.84	41,519.73
Meade	80.86	32.95	38.02	581.56	733.39
Nelson	344.19	204.72	65.38	39.14	653.43
Oldham	1.14	198.01	55.10	353.49	607.74
Shelby	0.46	289.69	85.75	53.49	429.39
Spencer	0.00	10.20	16.48	15.00	41.68
Trimble	8,395.15	21.67	11.73	330.87	8,759.42
KY Total	48,318.43	2,237.48	1,595.60	3,236.23	55,387.73
INDIANA					
Clark	3,158.00	721.00	150.00	269.00	4,298.00
Floyd	58,929.00	694.00	101.00	80.00	59,804.00
Harrison	24.00	321.00	71.00	81.00	497.00
Jefferson	38,197.00	351.00	41.00	49.00	38,638.00
Washington	2.00	291.00	35.00	49.00	377.00
IN Total	100,310.00	2,378.00	398.00	528.00	103,614.00
Total Emissions	148,628.43	4,615.48	1,993.60	3,764.23	159,001.73

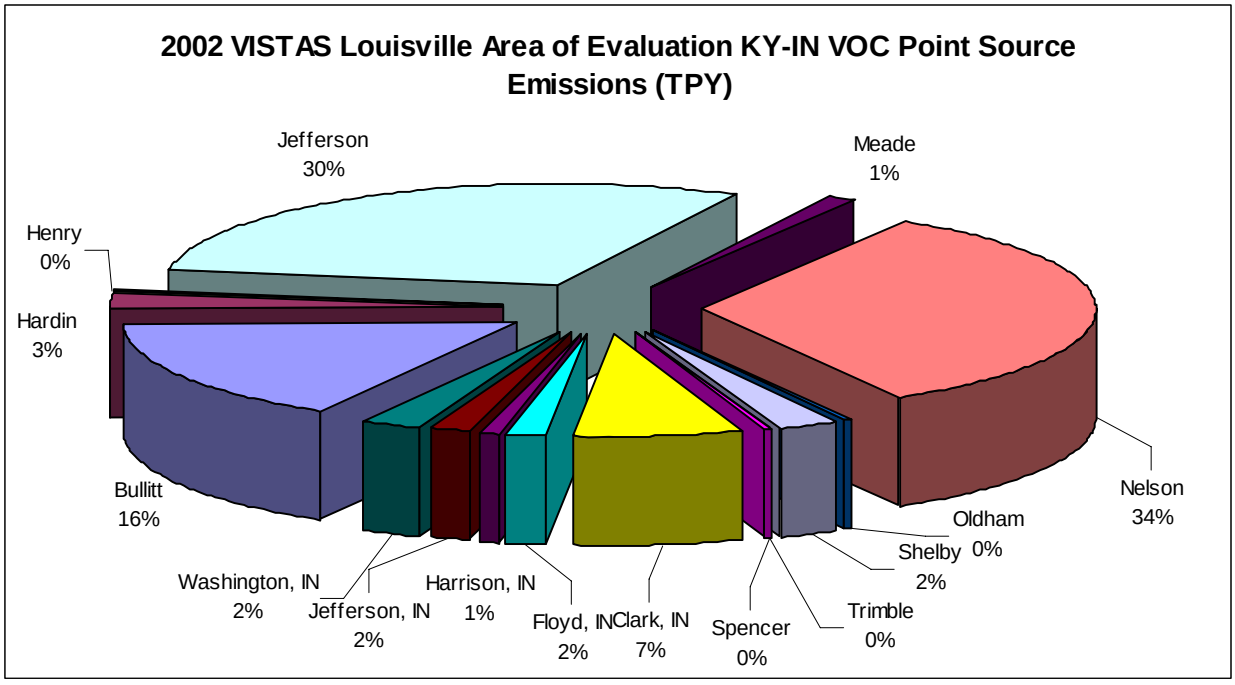
Table 7
2002 VISTAS Louisville Area of Evaluation
NH_3 Emissions
(tons per year)

County	NH3				
	Point	Area	Mobile	Nonroad	Total
KENTUCKY					
Bullitt	0.00	94.28	87.01	0.35	181.64
Hardin	8.66	1,086.61	155.13	0.59	1,250.99
Henry	0.00	436.49	30.23	0.11	466.83
Jefferson	39.54	165.86	872.79	4.40	1,082.59
Meade	0.00	413.04	27.91	0.20	441.15
Nelson	0.00	1,033.98	50.36	0.30	1,084.64
Oldham	4.54	199.27	52.59	0.39	256.79
Shelby	0.00	677.06	63.60	0.38	741.04
Spencer	0.00	193.83	11.80	0.12	205.75
Trimble	35.88	181.55	8.40	0.23	226.06
KY Total	88.62	4,481.97	1,359.80	7.07	5,937.46
INDIANA					
Clark	1.00	802.00	126.00	2.00	931.00
Floyd	1.00	261.00	84.00	1.00	347.00
Harrison	0.00	1,213.00	51.00	1.00	1,265.00
Jefferson	1.00	374.00	33.00	0.00	408.00
Washington	0.00	1,295.00	27.00	0.00	1,322.00
IN Total	3.00	3,945.00	321.00	4.00	4,273.00
Total Emissions	91.62	8,426.97	1,680.80	11.07	10,210.46

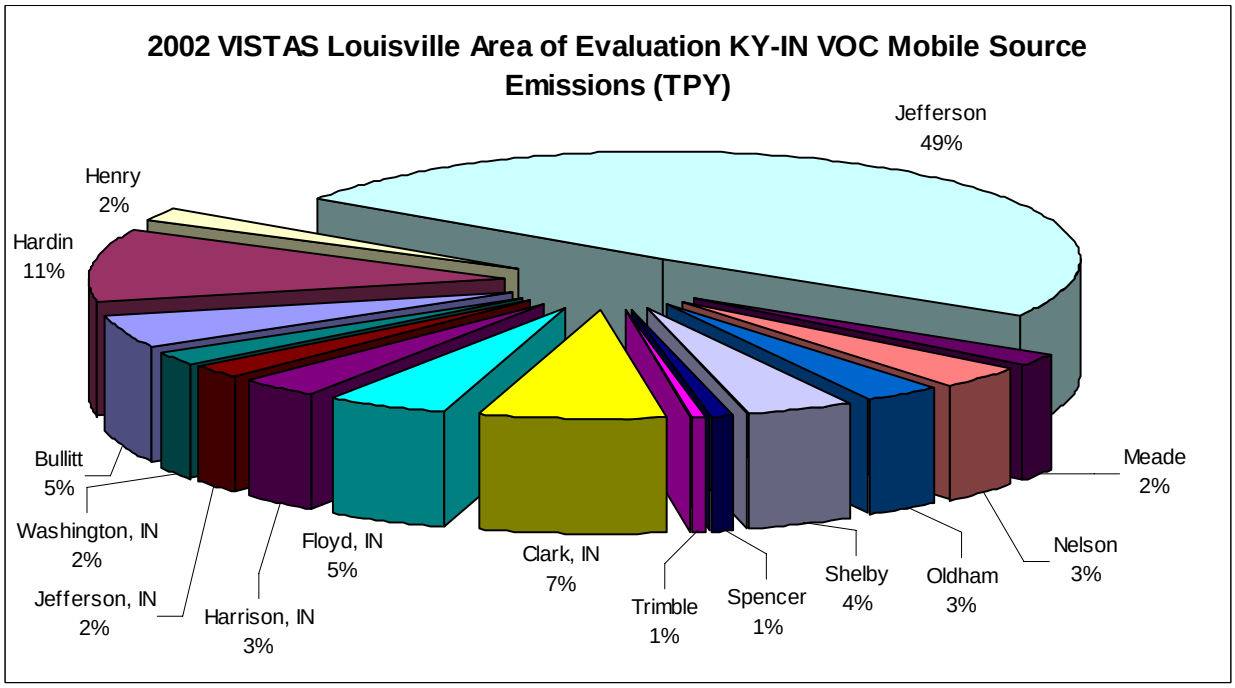
Table 8
2002 VISTAS Louisville Area of Evaluation
$PM_{2.5}$ Emissions
(tons per year)

County	PM2.5				
	Point	Area	Mobile	Nonroad	Total
KENTUCKY					
Bullitt	56.13	803.48	46.19	44.40	950.20
Hardin	86.25	1,029.04	77.77	128.75	1,321.81
Henry	9.24	401.08	19.22	18.93	448.47
Jefferson	823.61	1,082.67	395.83	720.38	3,022.49
Meade	40.84	367.32	16.96	143.09	568.21
Nelson	71.60	707.97	27.94	34.19	841.70
Oldham	24.18	634.99	25.17	109.73	794.07
Shelby	50.76	598.96	37.95	47.16	734.83
Spencer	0.50	290.78	7.51	15.01	313.80
Trimble	116.48	158.81	5.33	92.19	372.81
KY Total	1,279.59	6,075.10	659.86	1,353.83	9,368.38
INDIANA					
Clark	514.00	915.00	59.00	111.00	1,599.00
Floyd	52.00	725.00	40.00	54.00	871.00
Harrison	54.00	757.00	32.00	43.00	886.00
Jefferson	36.00	494.00	17.00	34.00	581.00
Washington	12.00	614.00	15.00	36.00	677.00
IN Total	668.00	3,505.00	163.00	278.00	4,614.00
Total Emissions	1,947.59	9,580.10	822.86	1,631.83	13,982.38

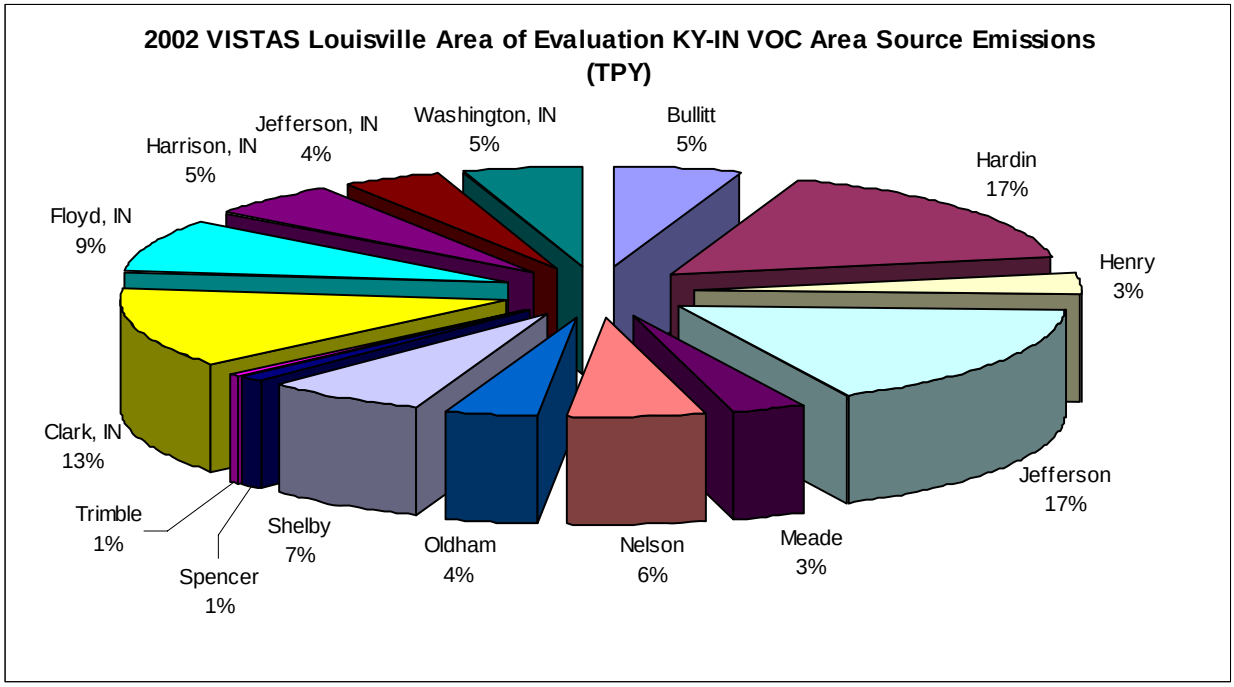
Lou-1


2002 VISTAS Louisville Area of Evaluation KY-IN VOC Point Source Emissions (TPY)
Jefferson 30%
Meade 1%
Henry 0%
Hardin 3%
Bullitt 16%
Nelson 34%
Oldham 0%
Shelby 2%
Trimble 0%
Spencer 0%
Clark, IN 7%
Floyd, IN 2%
Harrison, IN 1%
Jefferson, IN 2%
Washington, IN 2%

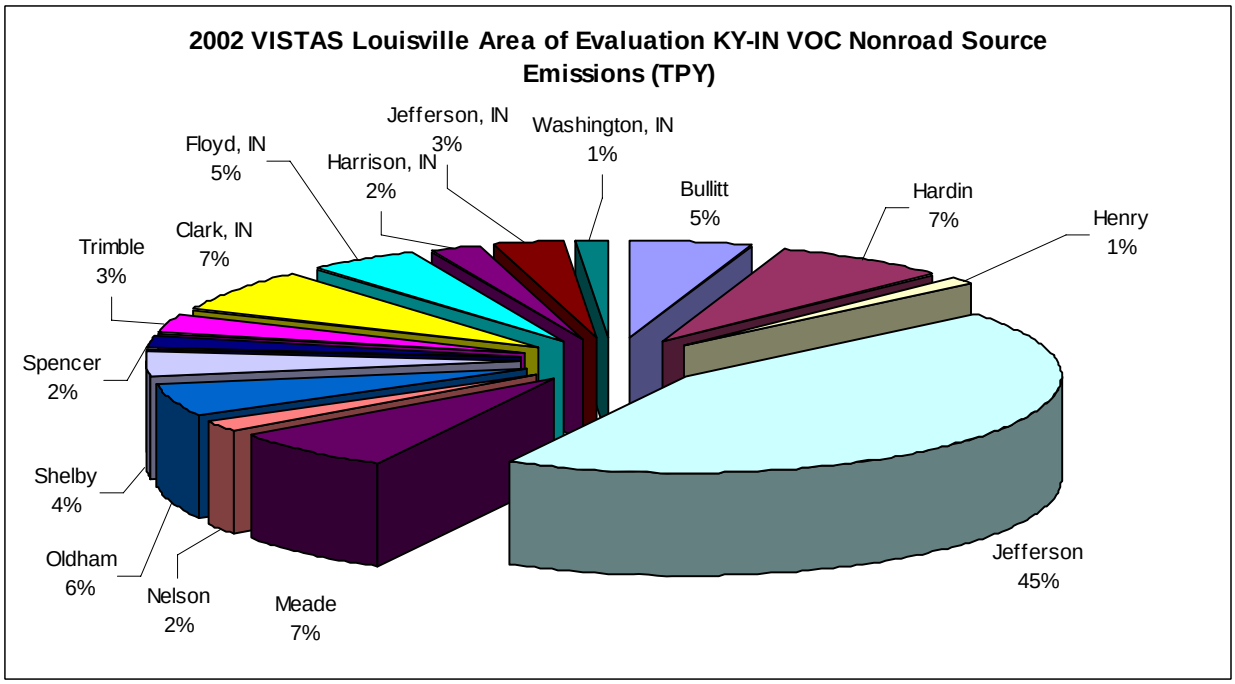
Lou-2


2002 VISTAS Louisville Area of Evaluation KY-IN VOC Mobile Source Emissions (TPY)
Jefferson 49%
Henry 2%
Hardin 11%
Bullitt 5%
Meade 2%
Washington, IN 2%
Nelson 3%
Floyd, IN 5%
Shelby 4%
Clark, IN 7%
Oldham 3%
Jefferson, IN 2%
Trimble 1%
Spencer 1%
Harrison, IN 3%

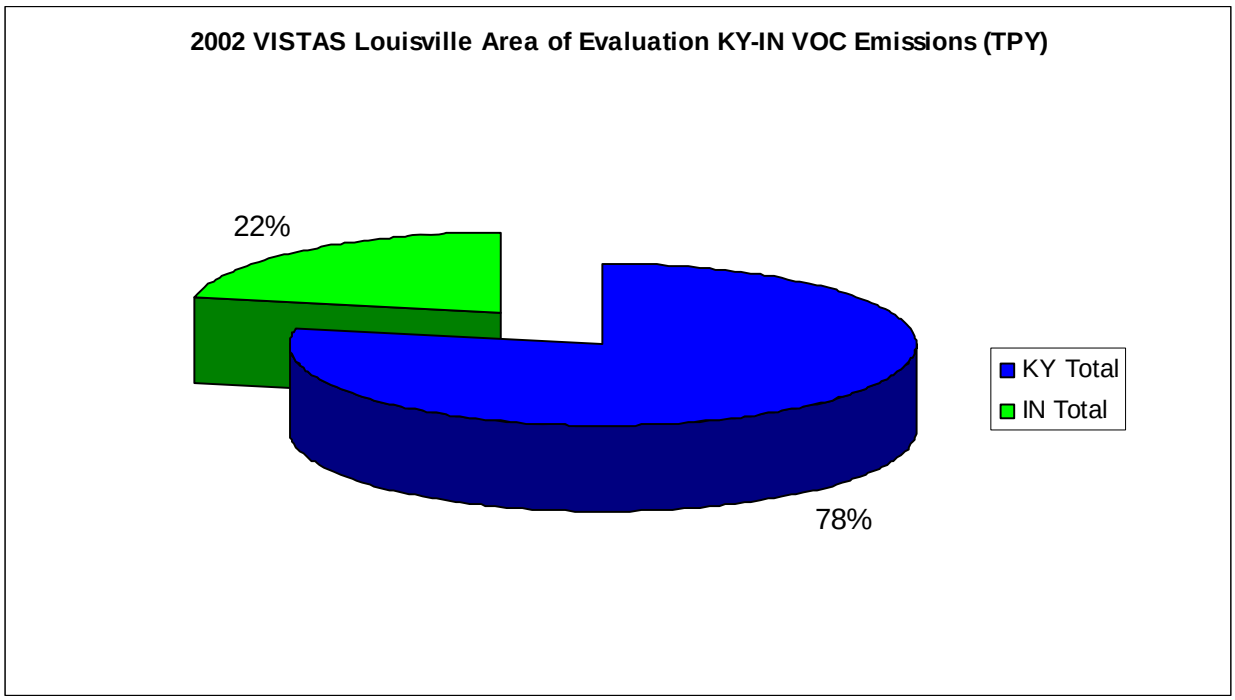
Lou-3


2002 VISTAS Louisville Area of Evaluation KY-IN VOC Area Source Emissions (TPY)
Jefferson, IN 4%
Washington, IN 5%
Bullitt 5%
Harrison, IN 5%
Hardin 17%
Floyd, IN 9%
Henry 3%
Clark, IN 13%
Jefferson 17%
Trimble 1%
Shelby 7%
Oldham 4%
Nelson 6%
Meade 3%
Spencer 1%

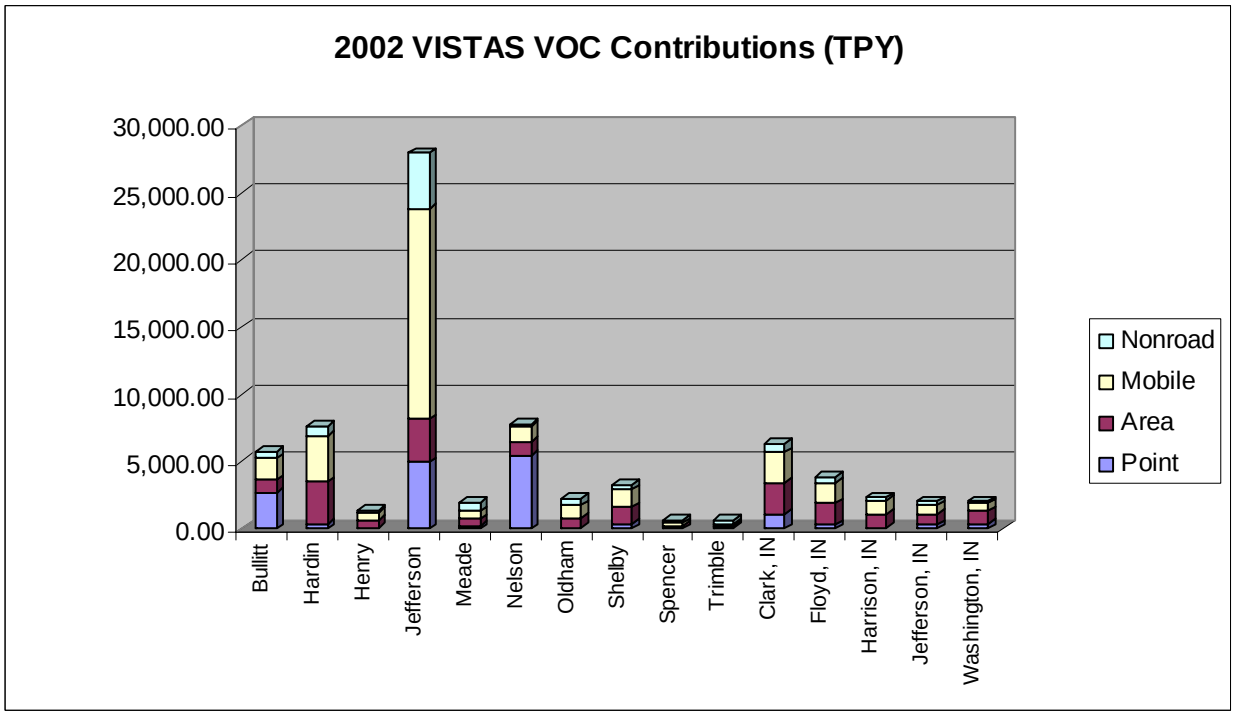
Lou-4


2002 VISTAS Louisville Area of Evaluation KY-IN VOC Nonroad Source Emissions (TPY)
Jefferson, IN 3%
Floyd, IN 5%
Washington, IN 1%
Harrison, IN 2%
Bullitt 5%
Hardin 7%
Henry 1%
Clark, IN 7%
Trimble 3%
Spencer 2%
Shelby 4%
Oldham 6%
Nelson 2%
Meade 7%
Jefferson 45%

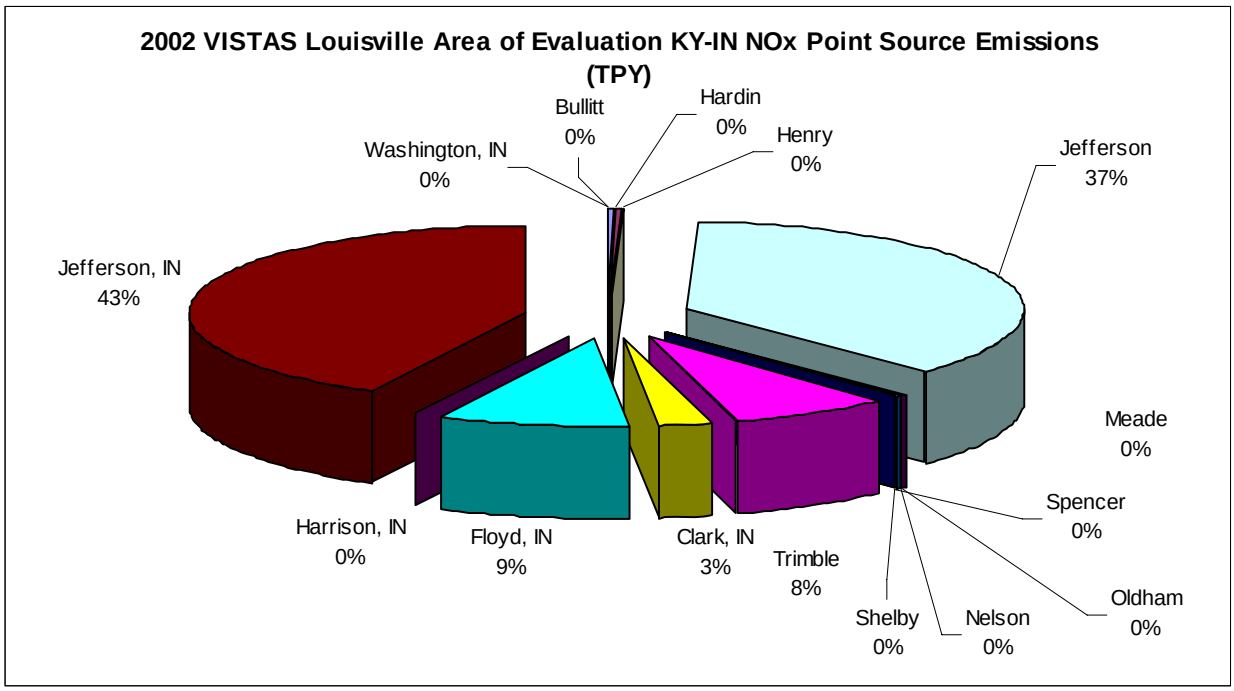
Lou-5


2002 VISTAS Louisville Area of Evaluation KY-IN VOC Emissions (TPY)
22%
78%
KY Total
IN Total

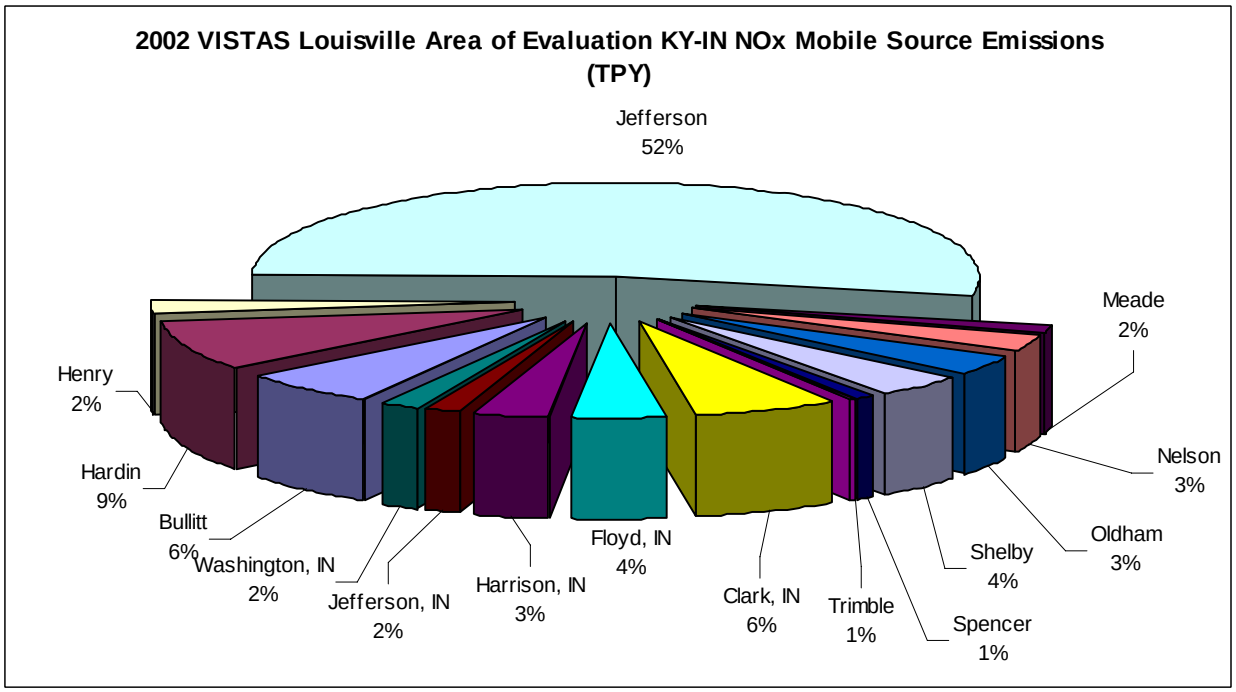
Lou-6


2002 VISTAS VOC Contributions (TPY)
30,000.00
25,000.00
20,000.00
15,000.00
10,000.00
5,000.00
0.00
Bullitt
Hardin
Henry
Jefferson
Meade
Nelson
Oldham
Shelby
Spencer
Trimble
Clark, IN
Floyd, IN
Harrison, IN
Jefferson, IN
Washington, IN
Nonroad
Mobile
Area
Point

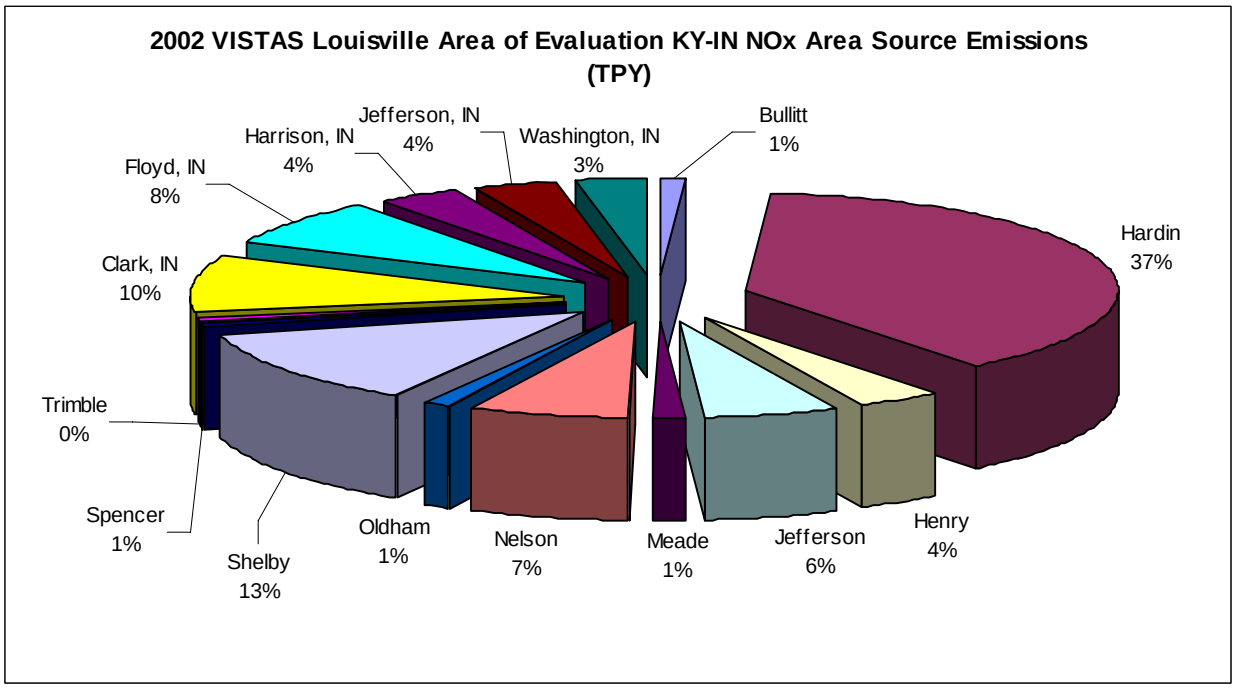
Lou-7


2002 VISTAS Louisville Area of Evaluation KY-IN NOx Point Source Emissions (TPY)
Bullitt 0%
Hardin 0%
Henry 0%
Washington, IN 0%
Jefferson 37%
Jefferson, IN 43%
Meade 0%
Spencer 0%
Harrison, IN 0%
Floyd, IN 9%
Clark, IN 3%
Trimble 8%
Oldham 0%
Shelby 0%
Nelson 0%

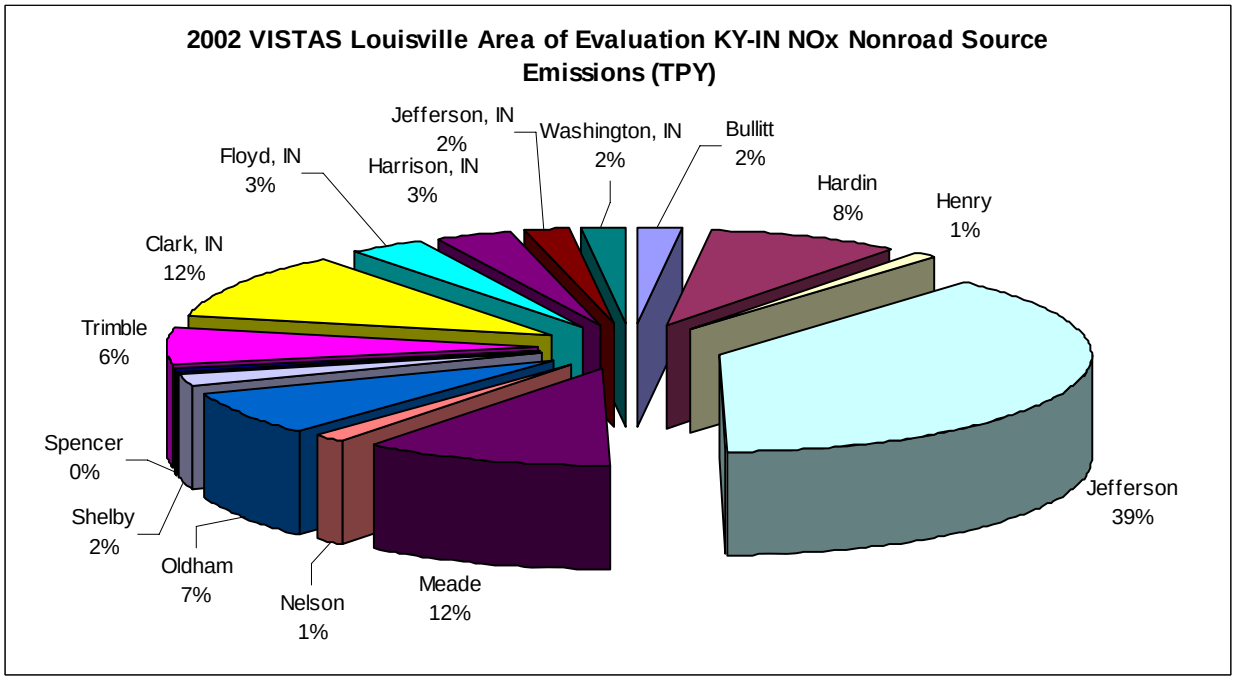
Lou-8


2002 VISTAS Louisville Area of Evaluation KY-IN NOx Mobile Source Emissions (TPY)
Jefferson 52%
Meade 2%
Henry 2%
Nelson 3%
Hardin 9%
Bullitt 6%
Oldham 3%
Washington, IN 2%
Floyd, IN 4%
Shelby 4%
Jefferson, IN 2%
Harrison, IN 3%
Clark, IN 6%
Trimble 1%
Spencer 1%

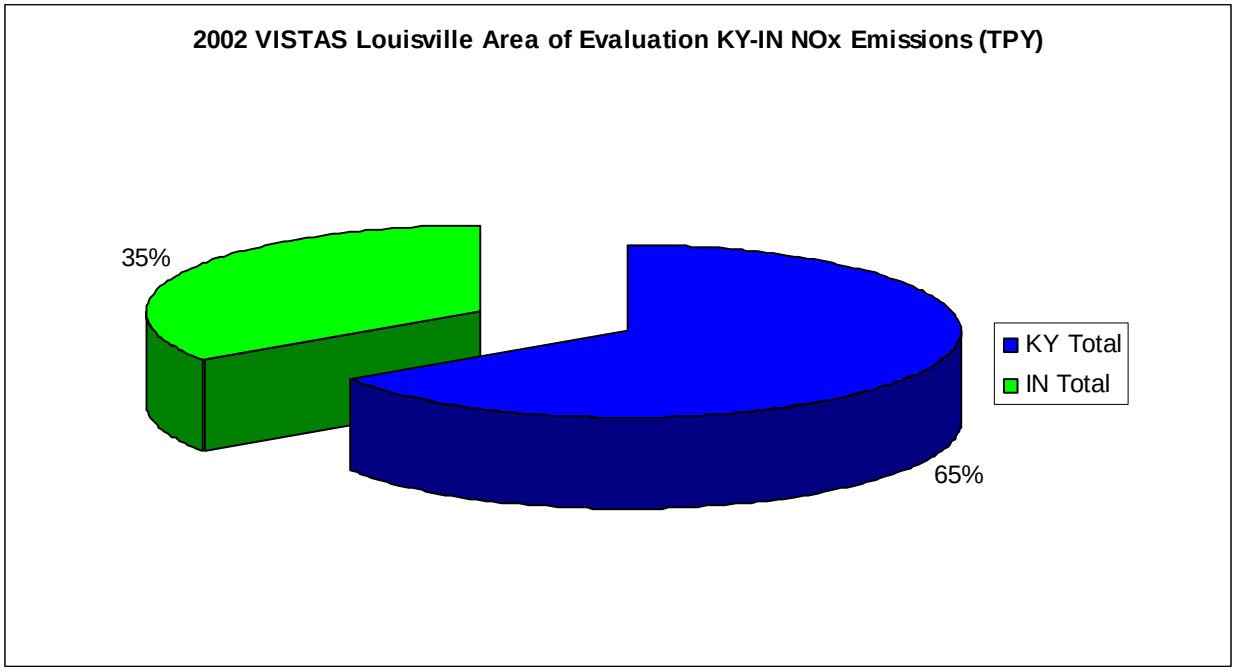
Lou-9


2002 VISTAS Louisville Area of Evaluation KY-IN NOx Area Source Emissions (TPY)
Jefferson, IN 4%
Harrison, IN 4%
Washington, IN 3%
Bullitt 1%
Floyd, IN 8%
Hardin 37%
Clark, IN 10%
Trimble 0%
Spencer 1%
Shelby 13%
Oldham 1%
Nelson 7%
Meade 1%
Jefferson 6%
Henry 4%

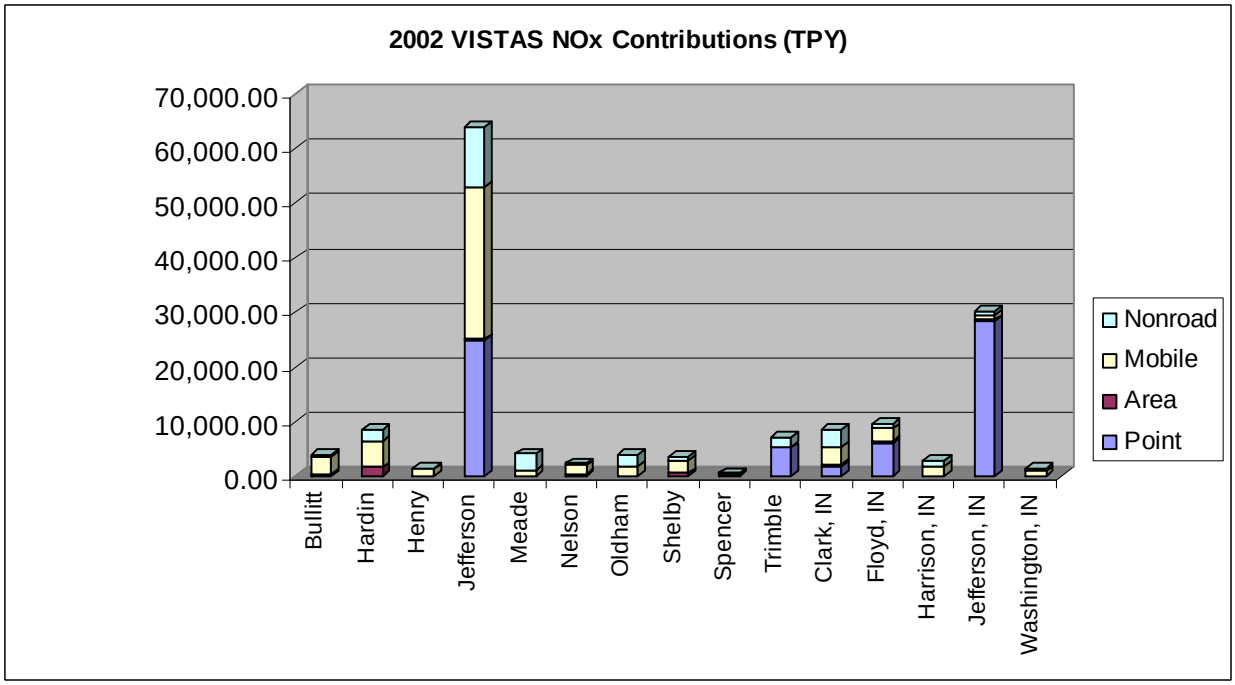
Lou-10


2002 VISTAS Louisville Area of Evaluation KY-IN NOx Nonroad Source Emissions (TPY)
Jefferson, IN 2%
Washington, IN 2%
Bullitt 2%
Floyd, IN 3%
Harrison, IN 3%
Hardin 8%
Henry 1%
Clark, IN 12%
Trimble 6%
Spencer 0%
Shelby 2%
Oldham 7%
Nelson 1%
Meade 12%
Jefferson 39%

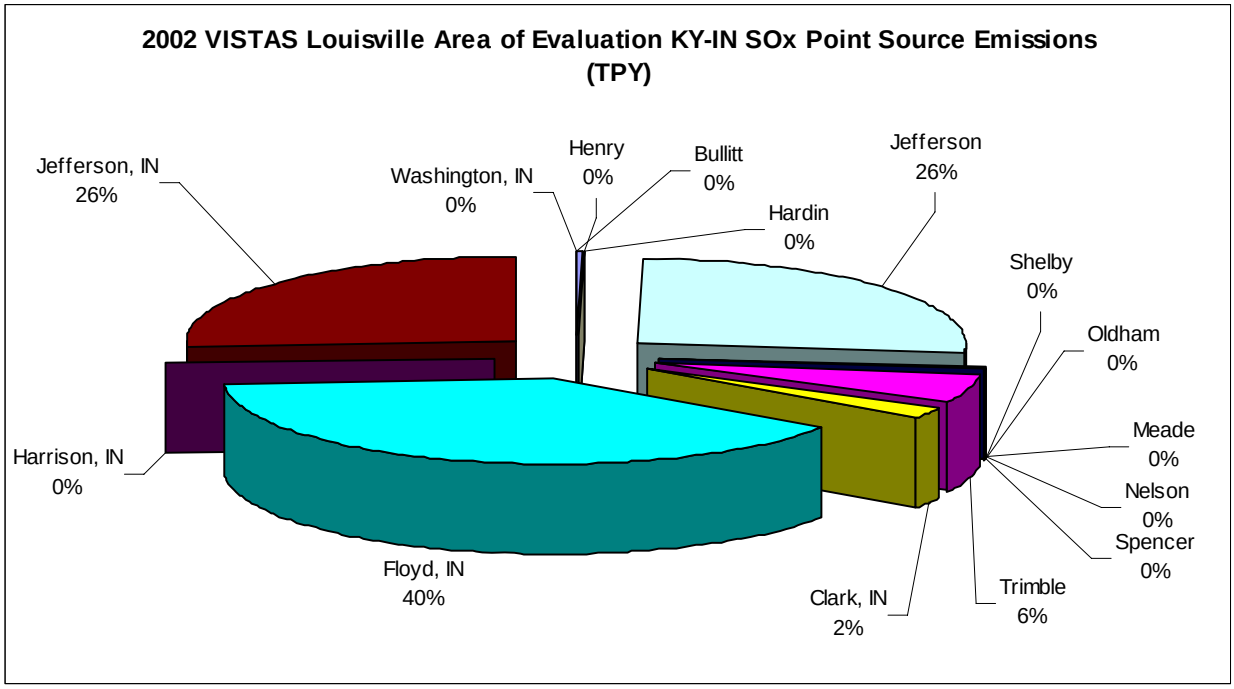
Lou-11


2002 VISTAS Louisville Area of Evaluation KY-IN NOx Emissions (TPY)
35%
65%
KY Total
IN Total

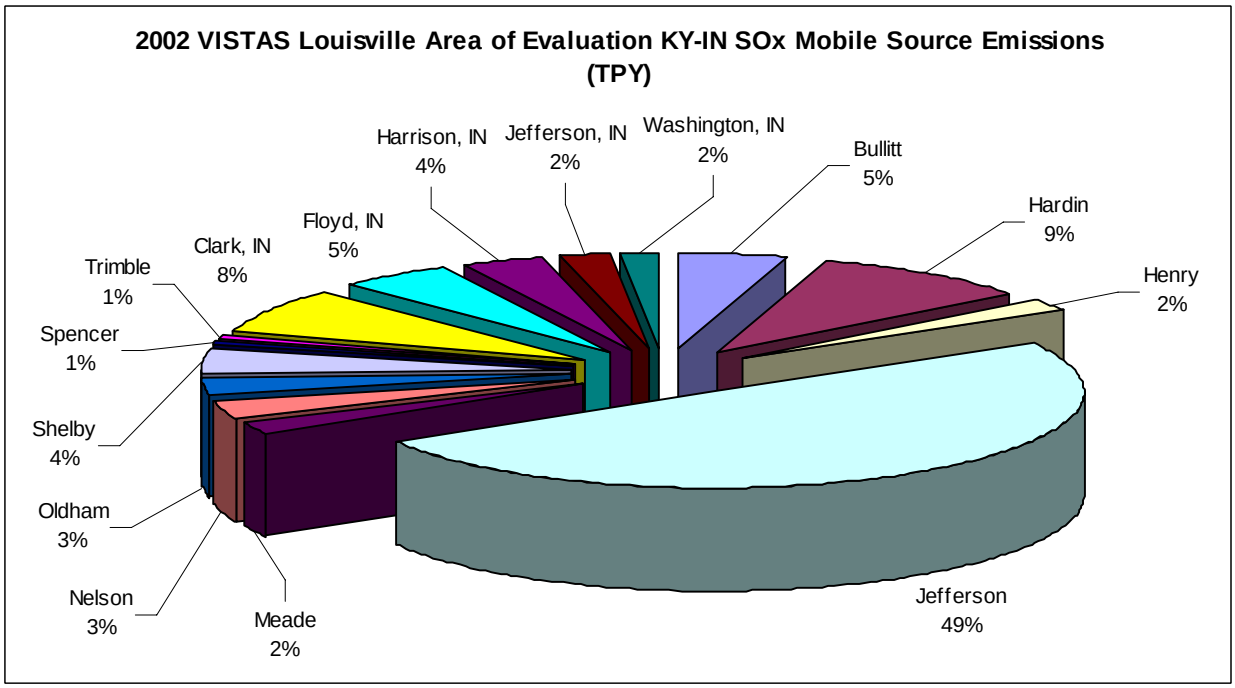
Lou-12


2002 VISTAS NOx Contributions (TPY)
70,000.00
60,000.00
50,000.00
40,000.00
30,000.00
20,000.00
10,000.00
0.00
Bullitt
Hardin
Henry
Jefferson
Meade
Nelson
Oldham
Shelby
Spencer
Trimble
Clark, IN
Floyd, IN
Harrison, IN
Jefferson, IN
Washington, IN
Nonroad
Mobile
Area
Point

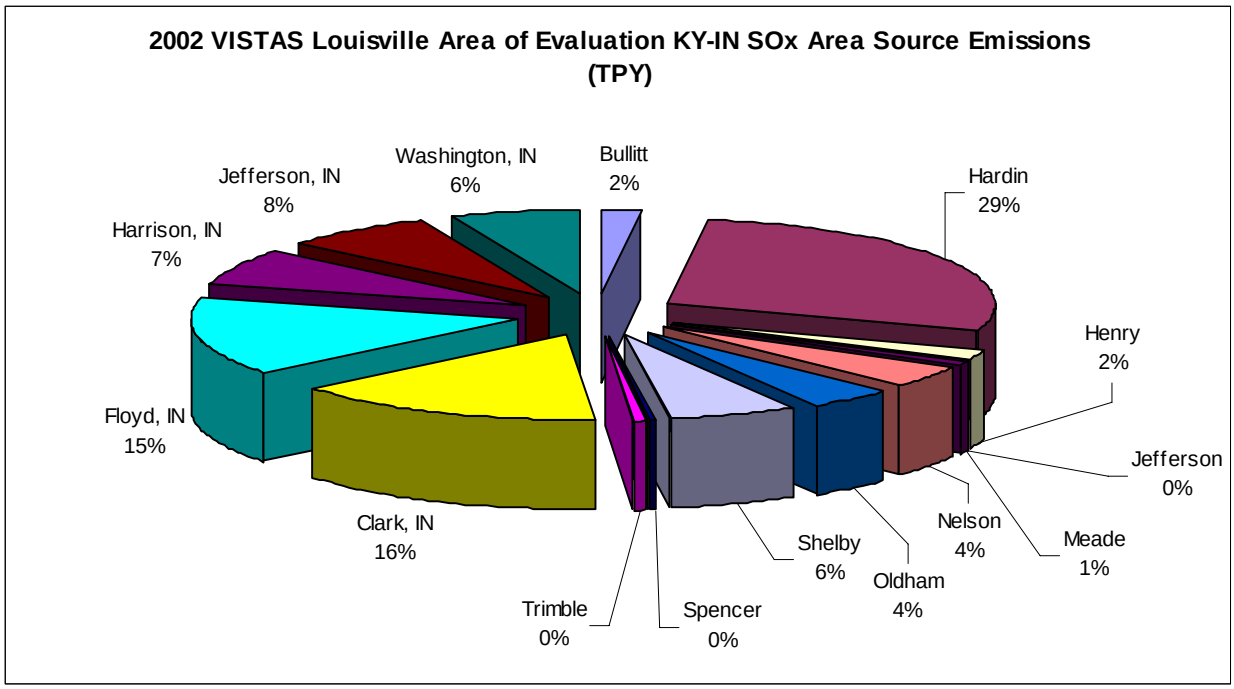
Lou-13


2002 VISTAS Louisville Area of Evaluation KY-IN SOx Point Source Emissions (TPY)
Jefferson, IN 26%
Washington, IN 0%
Henry 0%
Bullitt 0%
Hardin 0%
Jefferson 26%
Shelby 0%
Oldham 0%
Meade 0%
Nelson 0%
Spencer 0%
Trimble 6%
Clark, IN 2%
Floyd, IN 40%
Harrison, IN 0%

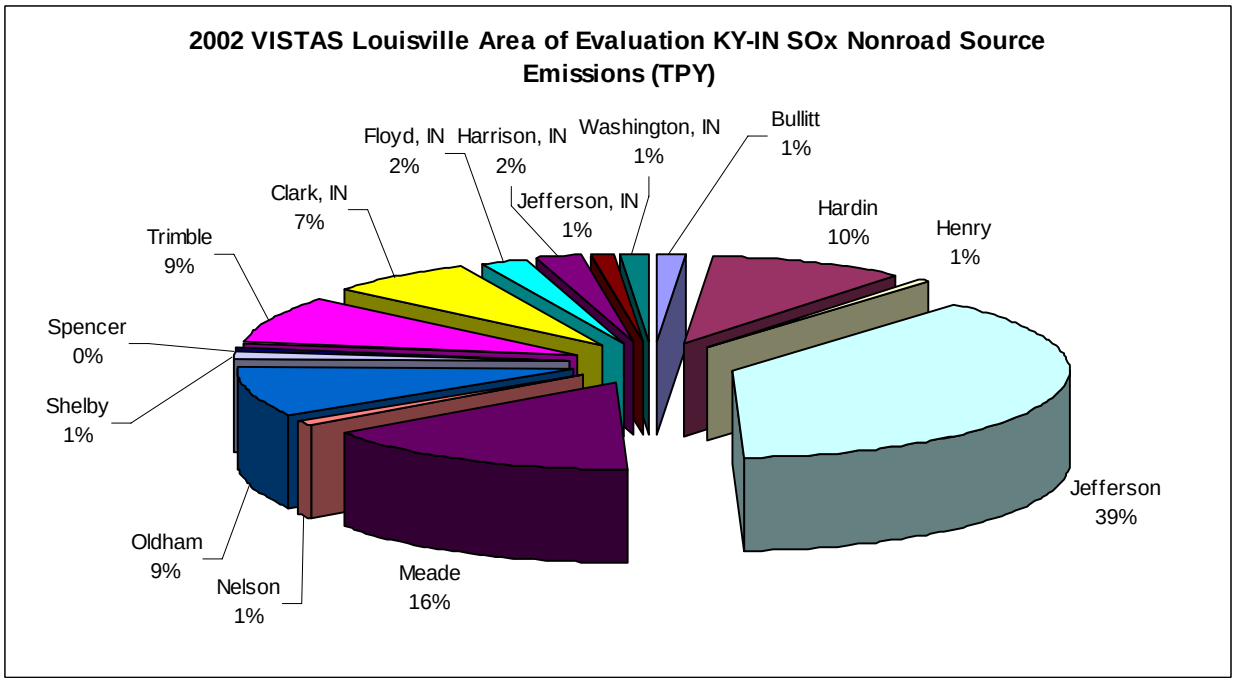
Lou-14


2002 VISTAS Louisville Area of Evaluation KY-IN SOx Mobile Source Emissions (TPY)
Harrison, IN 4%
Jefferson, IN 2%
Washington, IN 2%
Bullitt 5%
Hardin 9%
Henry 2%
Jefferson 49%
Meade 2%
Nelson 3%
Oldham 3%
Shelby 4%
Spencer 1%
Trimble 1%
Clark, IN 8%
Floyd, IN 5%

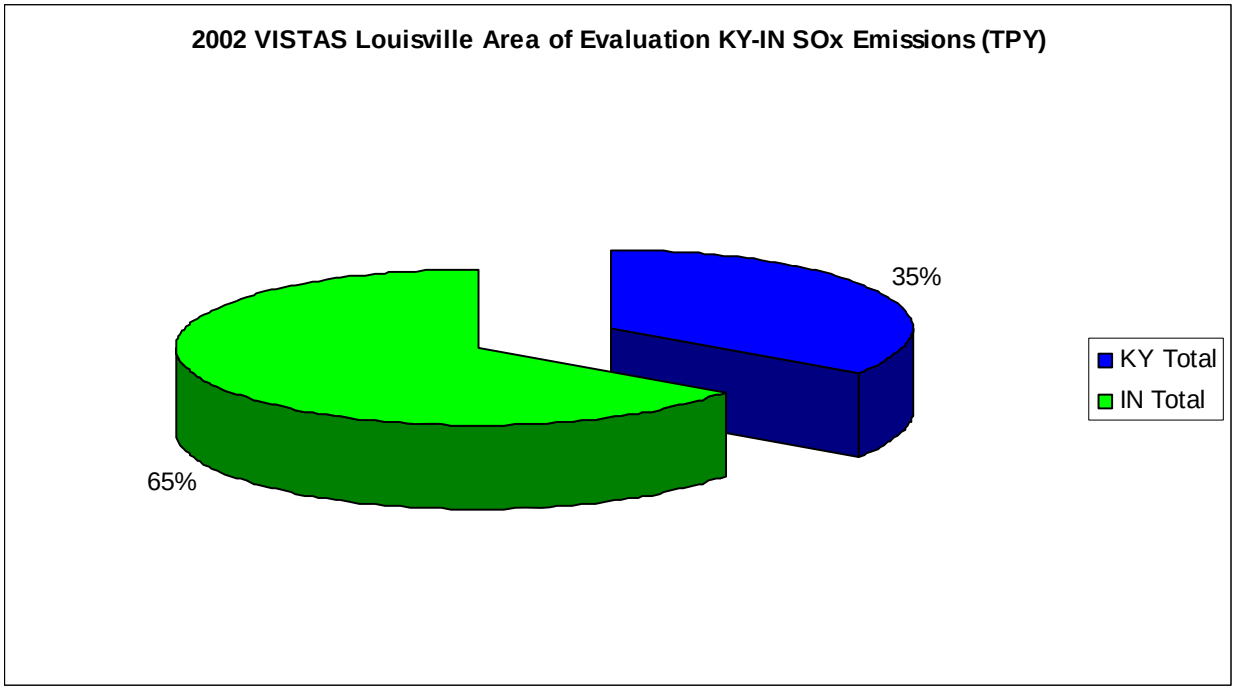
Lou-15


2002 VISTAS Louisville Area of Evaluation KY-IN SOx Area Source Emissions (TPY)
Jefferson, IN 8%
Washington, IN 6%
Bullitt 2%
Harrison, IN 7%
Hardin 29%
Henry 2%
Floyd, IN 15%
Jefferson 0%
Clark, IN 16%
Nelson 4%
Meade 1%
Shelby 6%
Oldham 4%
Trimble 0%
Spencer 0%

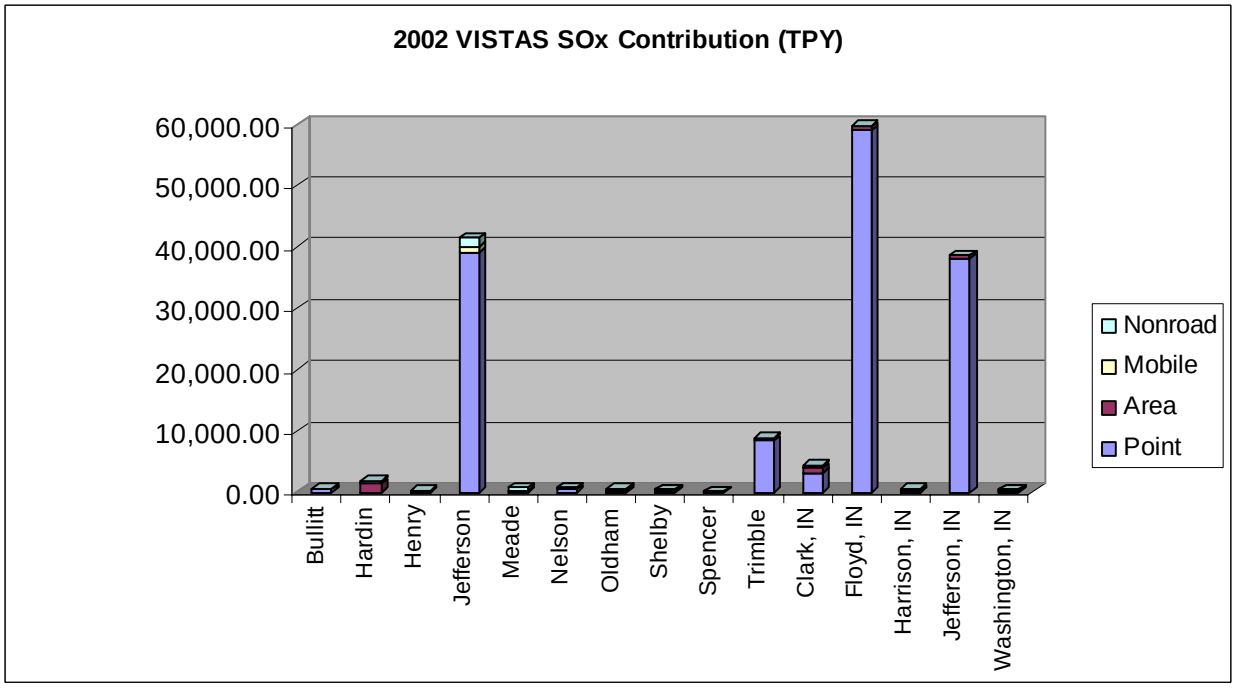
Lou-16


2002 VISTAS Louisville Area of Evaluation KY-IN SOx Nonroad Source Emissions (TPY)
Floyd, IN 2%
Harrison, IN 2%
Washington, IN 1%
Bullitt 1%
Clark, IN 7%
Jefferson, IN 1%
Hardin 10%
Henry 1%
Trimble 9%
Spencer 0%
Shelby 1%
Jefferson 39%
Oldham 9%
Nelson 1%
Meade 16%

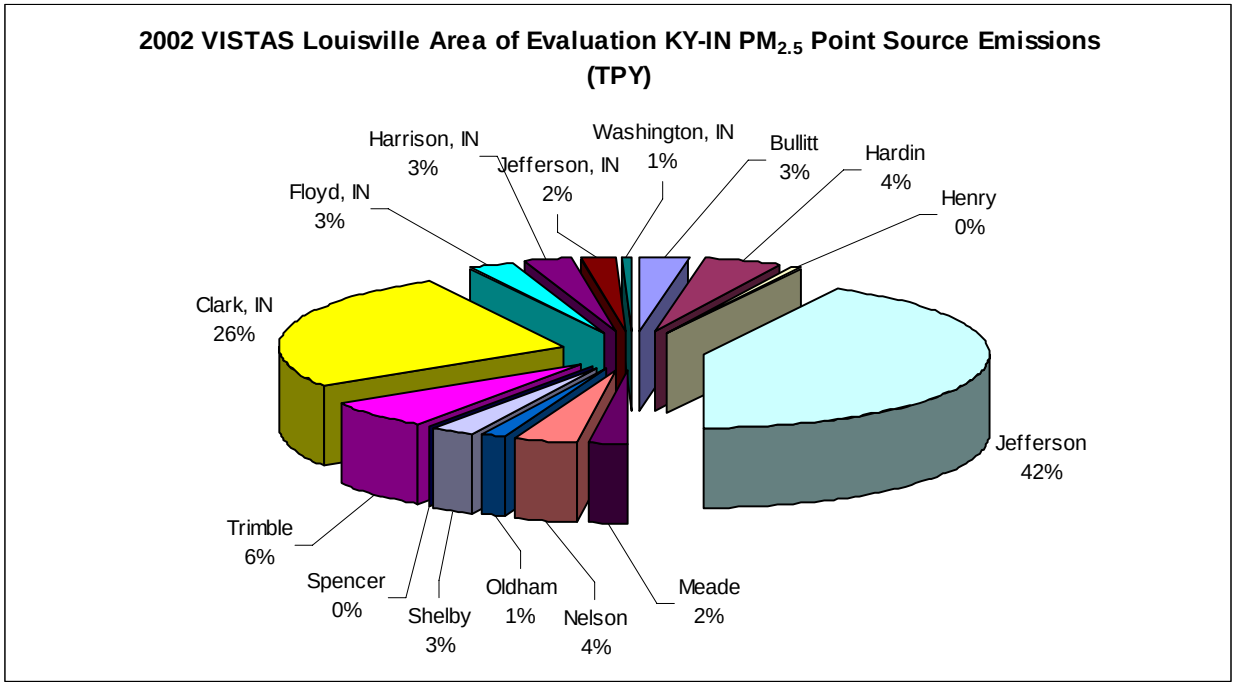
Lou-17


2002 VISTAS Louisville Area of Evaluation KY-IN SOx Emissions (TPY)
35%
65%
KY Total
IN Total

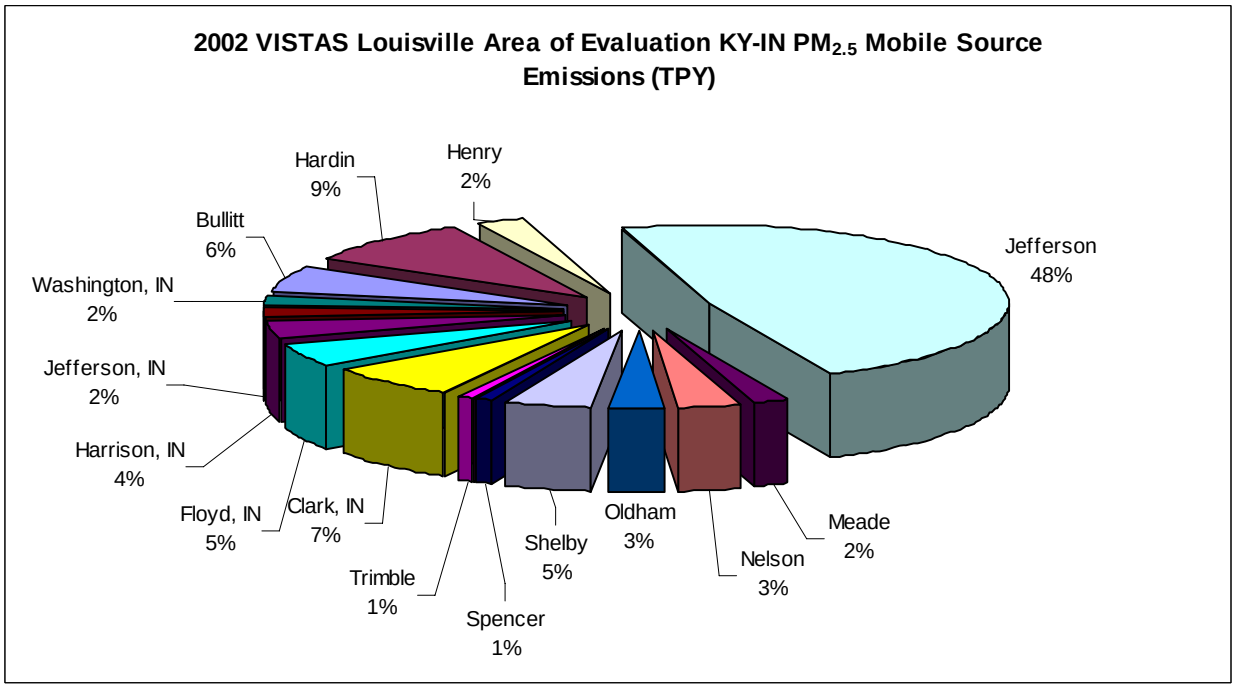
Lou-18


2002 VISTAS SOx Contribution (TPY)
60,000.00
50,000.00
40,000.00
30,000.00
20,000.00
10,000.00
0.00
Bullitt
Hardin
Henry
Jefferson
Meade
Nelson
Oldham
Shelby
Spencer
Trimble
Clark, IN
Floyd, IN
Harrison, IN
Jefferson, IN
Washington, IN
Nonroad
Mobile
Area
Point

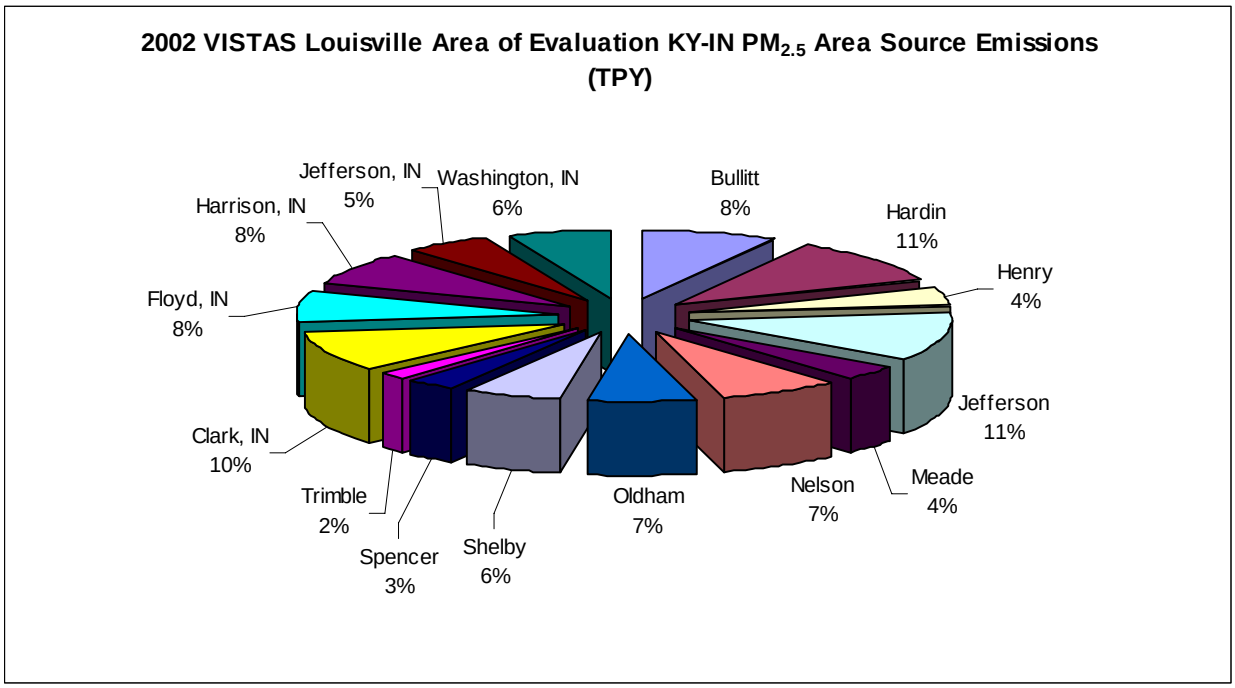
Lou-19


2002 VISTAS Louisville Area of Evaluation KY-IN PM2.5 Point Source Emissions (TPY)
Harrison, IN 3%
Washington, IN 1%
Bullitt 3%
Hardin 4%
Jefferson, IN 2%
Floyd, IN 3%
Henry 0%
Clark, IN 26%
Jefferson 42%
Trimble 6%
Spencer 0%
Shelby 3%
Oldham 1%
Nelson 4%
Meade 2%

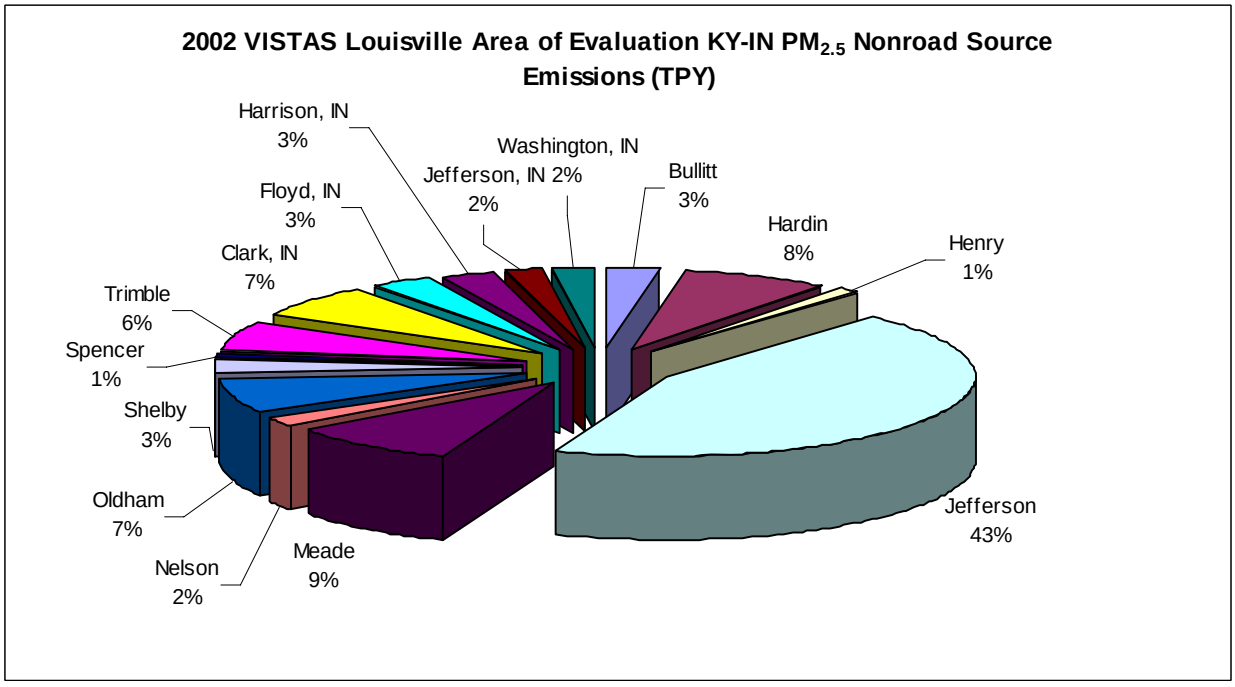
Lou-20


2002 VISTAS Louisville Area of Evaluation KY-IN PM2.5 Mobile Source Emissions (TPY)
Hardin 9%
Henry 2%
Bullitt 6%
Jefferson 48%
Washington, IN 2%
Jefferson, IN 2%
Harrison, IN 4%
Floyd, IN 5%
Clark, IN 7%
Trimble 1%
Spencer 1%
Shelby 5%
Oldham 3%
Nelson 3%
Meade 2%

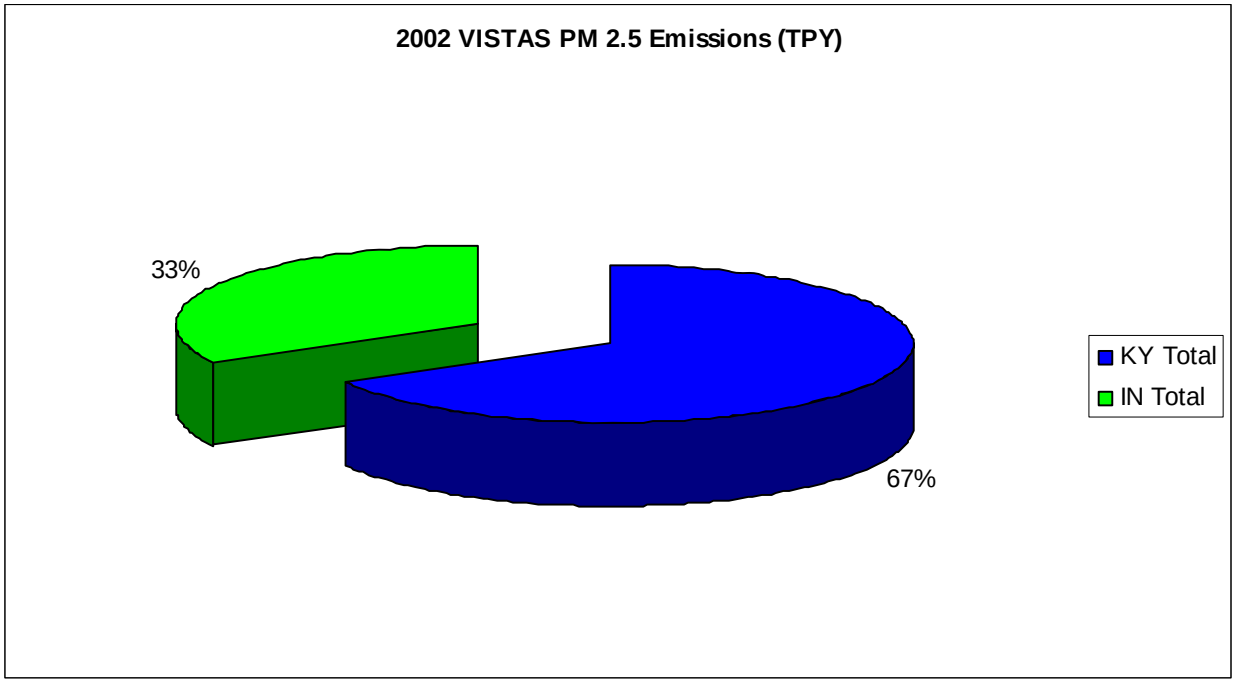
Lou-21


2002 VISTAS Louisville Area of Evaluation KY-IN PM2.5 Area Source Emissions (TPY)
Jefferson, IN 5%
Washington, IN 6%
Bullitt 8%
Harrison, IN 8%
Hardin 11%
Henry 4%
Floyd, IN 8%
Jefferson 11%
Clark, IN 10%
Meade 4%
Nelson 7%
Trimble 2%
Oldham 7%
Spencer 3%
Shelby 6%

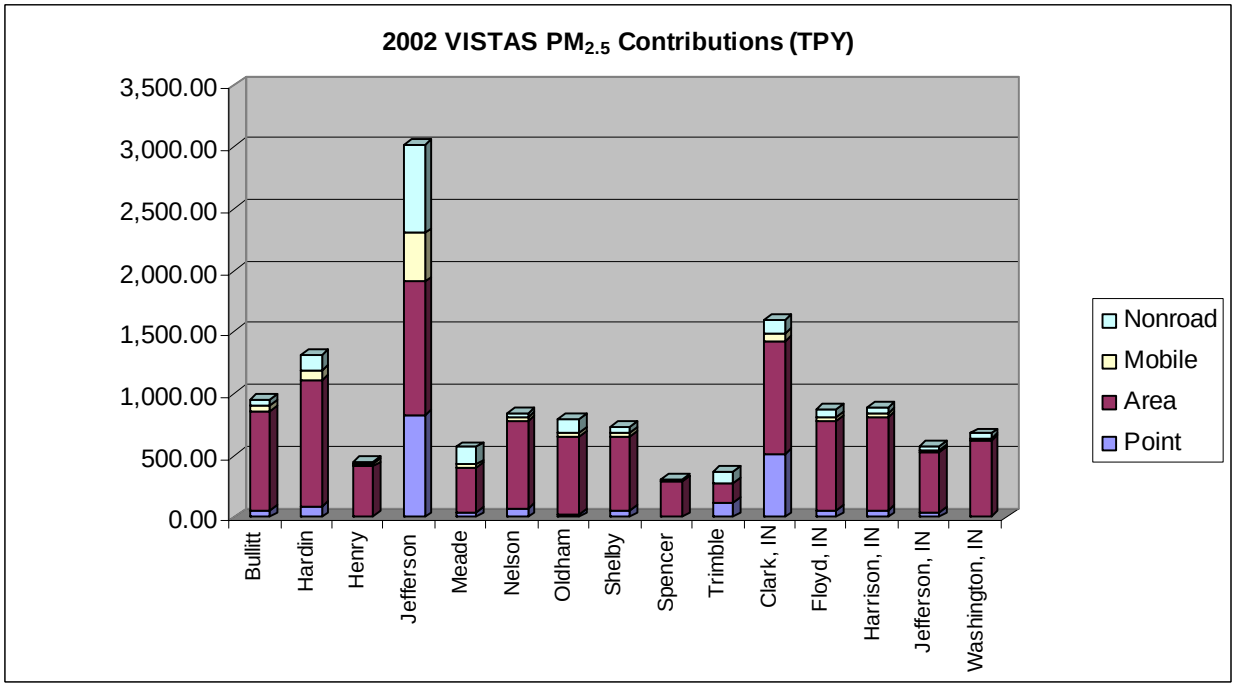
Lou-22


2002 VISTAS Louisville Area of Evaluation KY-IN PM2.5 Nonroad Source Emissions (TPY)
Harrison, IN 3%
Washington, IN
Jefferson, IN 2%
2%
Bullitt 3%
Floyd, IN 3%
Hardin 8%
Henry 1%
Clark, IN 7%
Trimble 6%
Spencer 1%
Shelby 3%
Oldham 7%
Jefferson 43%
Nelson 2%
Meade 9%

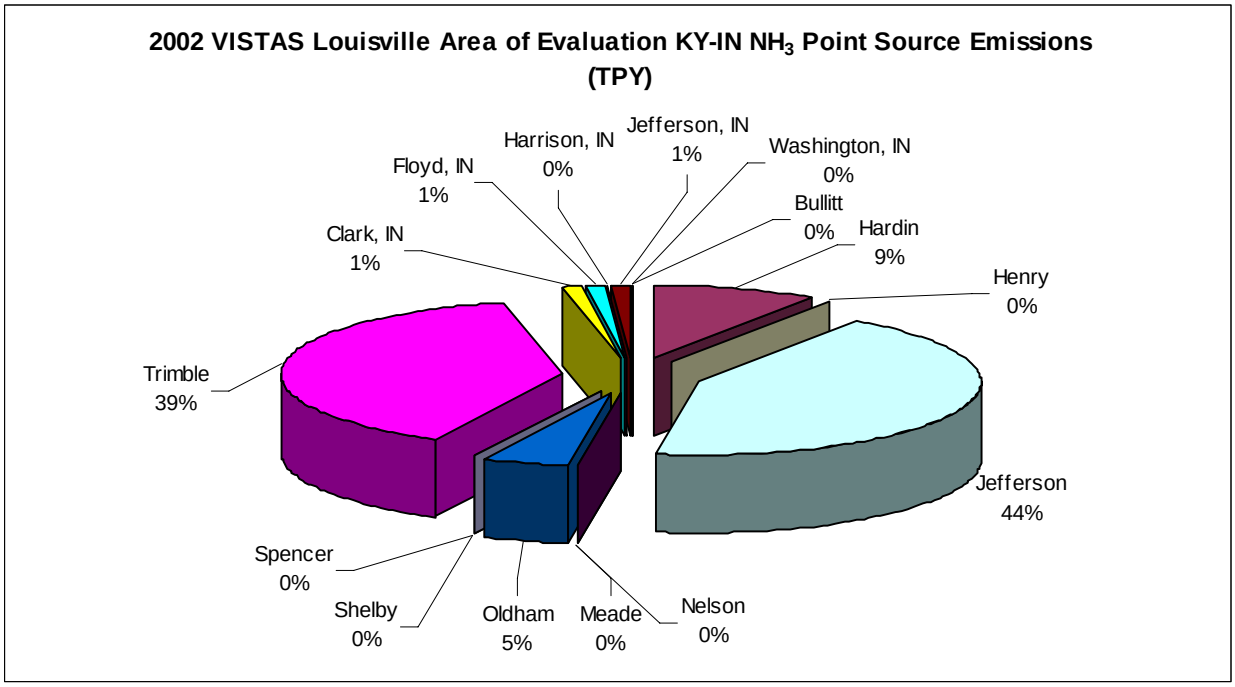
Lou-23


2002 VISTAS PM 2.5 Emissions (TPY)
33%
67%
KY Total
IN Total

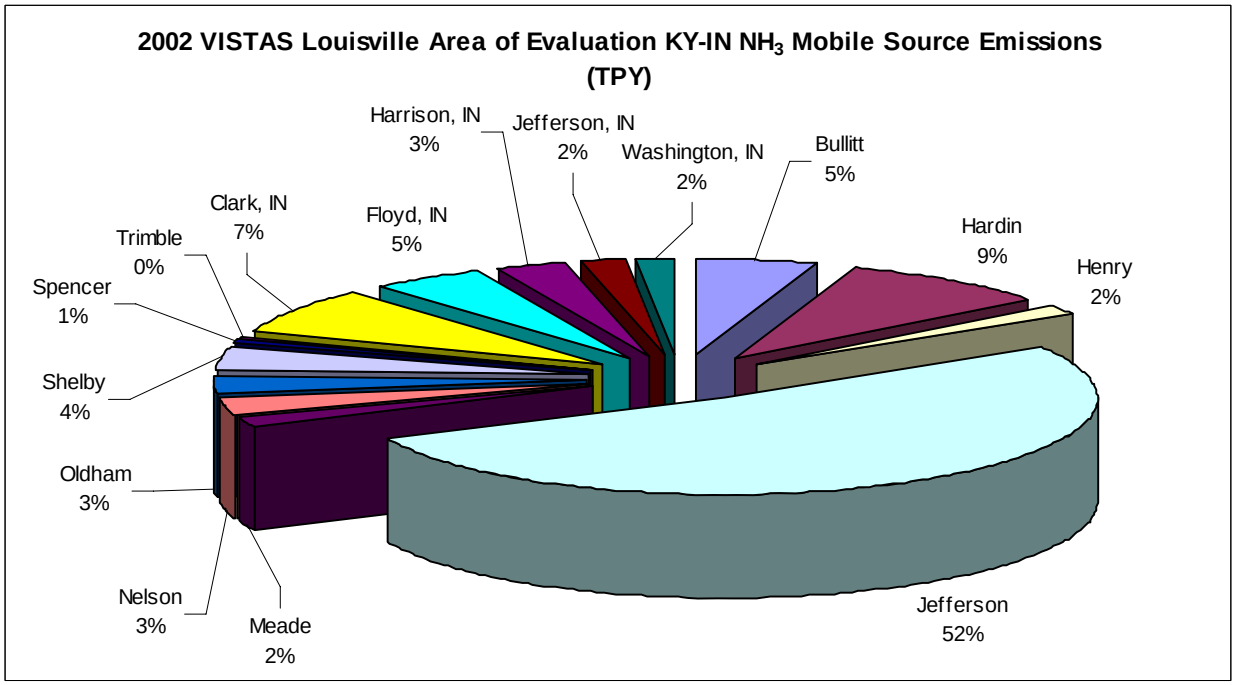
Lou-24


2002 VISTAS PM2.5 Contributions (TPY)
3,500.00
3,000.00
2,500.00
2,000.00
1,500.00
1,000.00
500.00
0.00
Bullitt
Hardin
Henry
Jefferson
Meade
Nelson
Oldham
Shelby
Spencer
Trimble
Clark, IN
Floyd, IN
Harrison, IN
Jefferson, IN
Washington, IN
Nonroad
Mobile
Area
Point

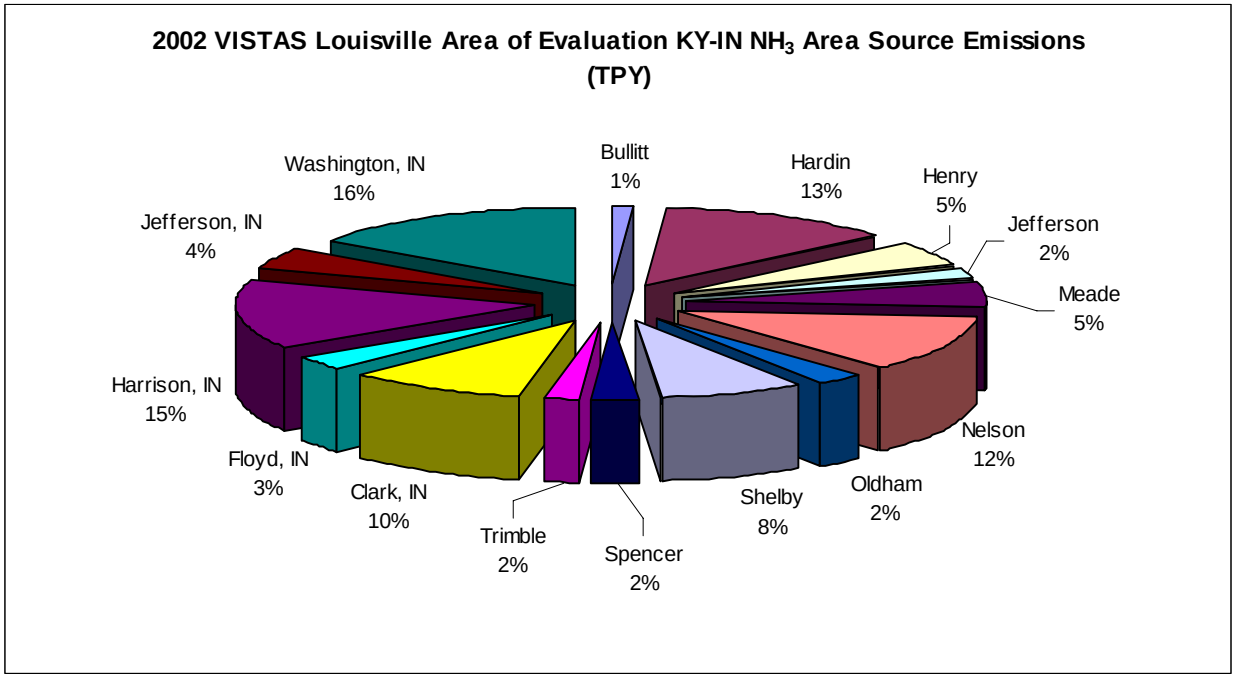
Lou-25


2002 VISTAS Louisville Area of Evaluation KY-IN NH3 Point Source Emissions (TPY)
Harrison, IN 0%
Jefferson, IN 1%
Washington, IN 0%
Floyd, IN 1%
Bullitt 0%
Clark, IN 1%
Hardin 9%
Henry 0%
Trimble 39%
Jefferson 44%
Spencer 0%
Shelby 0%
Oldham 5%
Meade 0%
Nelson 0%

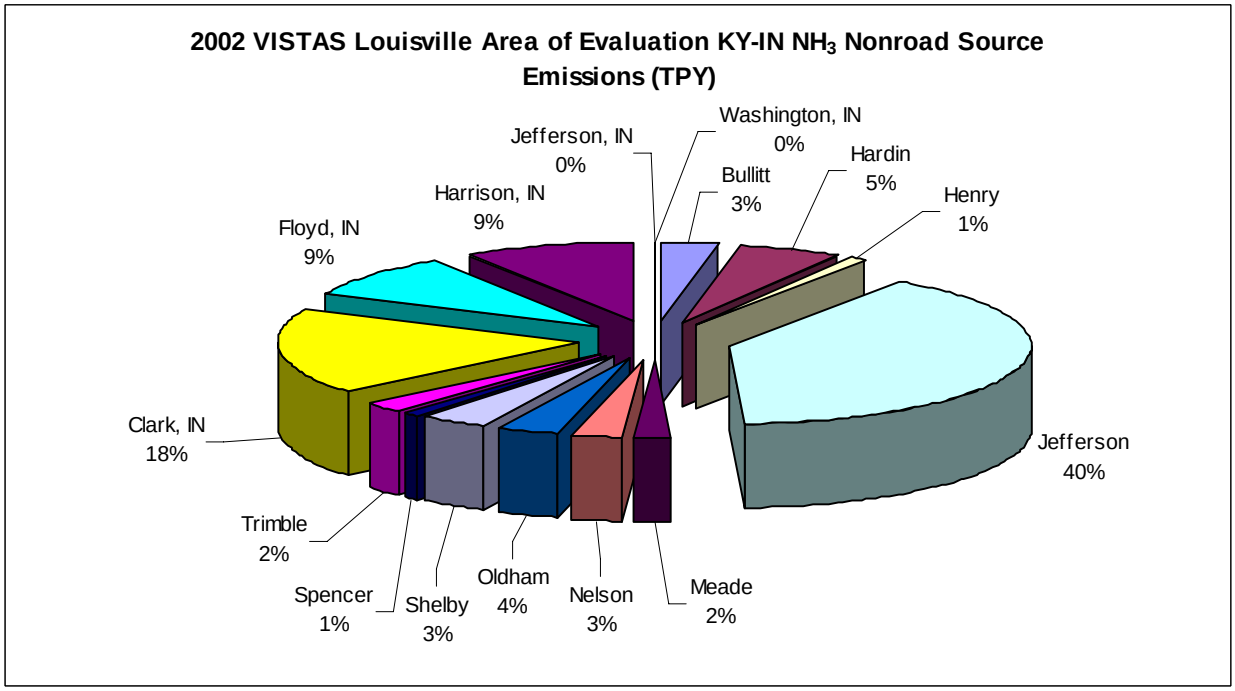
Lou-26


2002 VISTAS Louisville Area of Evaluation KY-IN NH3 Mobile Source Emissions (TPY)
Harrison, IN 3%
Jefferson, IN 2%
Washington, IN 2%
Bullitt 5%
Clark, IN 7%
Floyd, IN 5%
Trimble 0%
Hardin 9%
Henry 2%
Spencer 1%
Shelby 4%
Oldham 3%
Nelson 3%
Meade 2%
Jefferson 52%

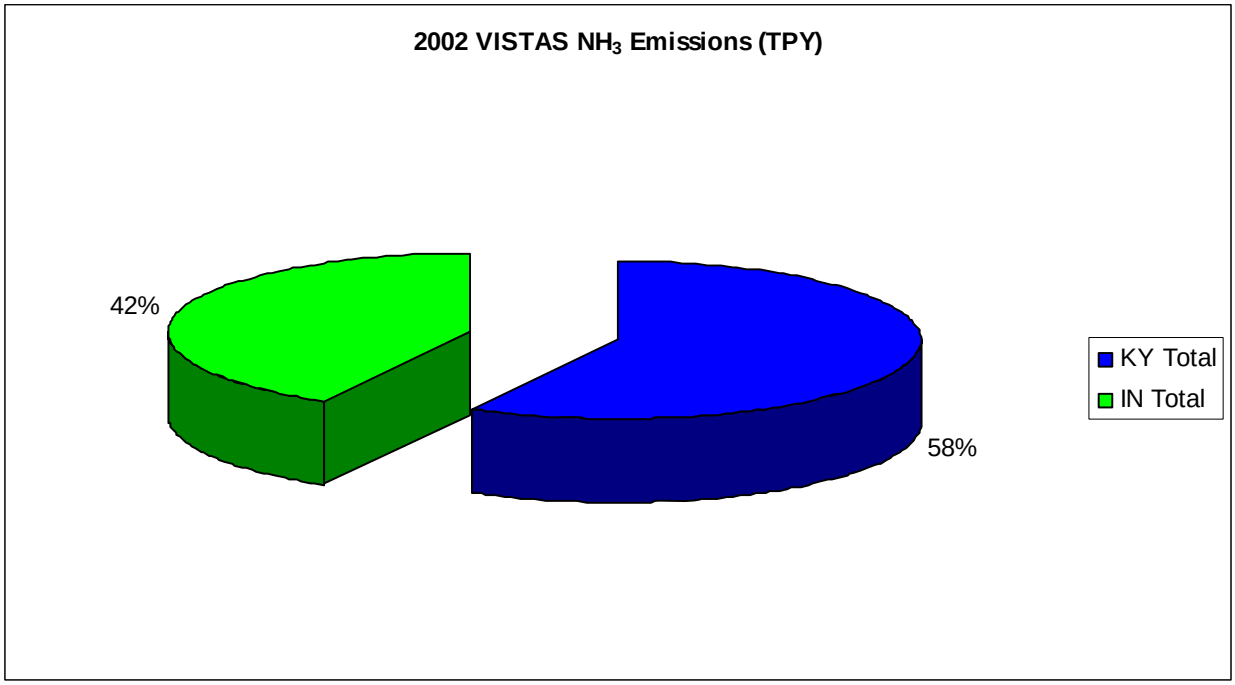
Lou-27


2002 VISTAS Louisville Area of Evaluation KY-IN NH3 Area Source Emissions (TPY)
Washington, IN 16%
Bullitt 1%
Hardin 13%
Henry 5%
Jefferson, IN 4%
Jefferson 2%
Meade 5%
Harrison, IN 15%
Nelson 12%
Floyd, IN 3%
Clark, IN 10%
Oldham 2%
Shelby 8%
Trimble 2%
Spencer 2%

Lou-28


2002 VISTAS Louisville Area of Evaluation KY-IN NH3 Nonroad Source Emissions (TPY)
Jefferson, IN 0%
Washington, IN 0%
Hardin 5%
Bullitt 3%
Harrison, IN 9%
Henry 1%
Floyd, IN 9%
Clark, IN 18%
Jefferson 40%
Trimble 2%
Spencer 1%
Shelby 3%
Oldham 4%
Nelson 3%
Meade 2%

Lou-29


2002 VISTAS NH3 Emissions (TPY)
42%
58%
KY Total
IN Total

Lou-30

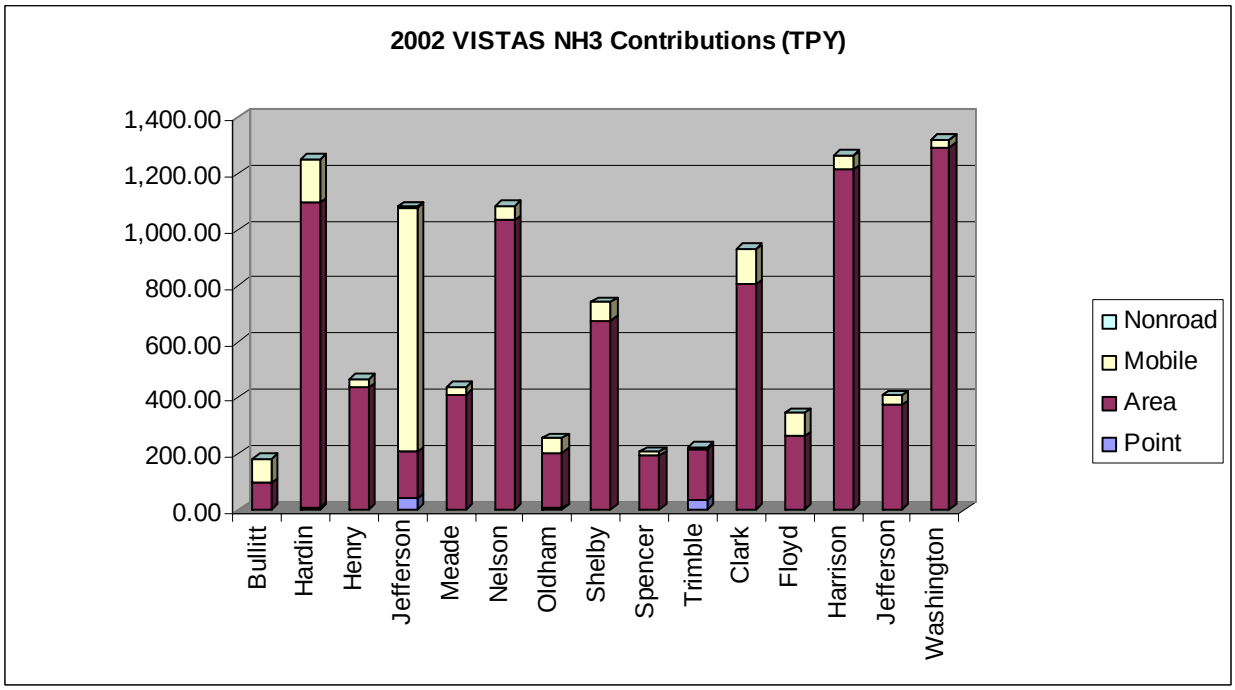

2002 VISTAS NH3 Contributions (TPY)
1,400.00
1,200.00
1,000.00
800.00
600.00
400.00
200.00
0.00
Bullitt
Hardin
Henry
Jefferson
Meade
Nelson
Oldham
Shelby
Spencer
Trimble
Clark
Floyd
Harrison
Jefferson
Washington
Nonroad
Mobile
Area
Point

Table 9.
PM2.5 monitor impacts from the Arkansas and Mississippi Fires in 2005 across the Kentucky areas of evaluation.

2005*						
	State	County	Dates	Violating Values (> 35 ug/m3)	Top 10 Concentration Days	Dates for Exclusion due to Arkansas and Mississippi fires
	KY	Bullitt				9/10/2005
						9/13/2005
21-029-0006	37.985556	-85.713056	6/30/2005	42.4		
						Adjacent Calendar Dates to those requested for exclusion
			8/11/2005	41.2		
			9/10/2005	39.0		9/8/2005
			6/21/2005	35.1		9/9/2005
						9/11/2005
	KY	Campbell				9/12/2005
21-037-0003	39.065556	-84.451944	9/10/2005	48.5	4th	
			9/13/2005	39.0		
			8/2/2005	38.0		
			8/11/2005	36.0		
	KY	Christian				
21-047-0006	36.911667	-87.323611	9/13/2005	44.9	9th	
			9/10/2005	41.0		
	KY	Hardin				
21-093-0006	37.706389	-85.851667	9/10/2005	39.6		
			9/13/2005	39.5		
			6/21/2005	35.1		
	KY	Jefferson				
21-111-0043	38.233222	-85.825278	9/9/2005	48.8	3rd	
			9/11/2005	47.8	5th	
			9/10/2005	45.9	8th	
			8/11/2005	44.3		
			9/8/2005	43.5		
			6/30/2005	42.9		
			9/13/2005	42.9		
			8/10/2005	40.9		
			6/25/2005	40.8		
			2/2/2005	40.1		

	KY	Jefferson			
21-111-0044	38.190833	-85.780556	9/11/2005	48.9	2nd
			9/9/2005	44.5	10th
			9/10/2005	43.2	
			8/11/2005	43.1	
			9/8/2005	41.1	
			8/10/2005	40.7	
			9/13/2005	40.1	
			6/26/2005	39.3	
			2/4/2005	38.5	
			9/12/2005	37.4	

	KY	Jefferson			
21-111-0048	38.240556	-85.731667	9/10/2005	46.4	7th
			8/11/2005	43.6	
			6/30/2005	43.2	
			9/13/2005	41.6	
			7/24/3005	35.2	

	KY	Jefferson			
21-111-0051	38.060833	-85.896111	9/13/2005	39.1	
			6/27/2005	36.5	

	KY	Kenton			
21-117-0007	39.0725	-84.525000	9/10/2005	52.7	**1st**
			1/31/2005	46.8	6th
			9/13/2005	42.1	
			8/2/2005	40.4	
			8/11/2005	36.4	

*From AQS/USEPA AMP440 Maximum Values report for Kentucky in 2005.